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MCB CAMP LEJUENE  
5090.3a

VALIDATED DATA PACKAGE, 1507154, MCB CAMP LEJUENE NC  
8/30/2015  
DATAQUAL ENVIRONMENTAL SERVICES

# DataQual

## Environmental Services, LLC

CH2M HILL  
14120 Ballantyne Corporate Place  
Suite 200  
Charlotte, NC 28277

August 30, 2015  
SDG# 1507154, Emperical Laboratories  
MCB Camp Lejeune-CTO-WE9A

Dear Ms. Kleist,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #1507154. The data validation was performed in accordance with the SW846 Methods 8260B for volatiles, as well as good professional judgment. Also used in the validation of these samples were The National Functional Guidelines for Organic Data Review (June, 2008) as applicable. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	VOA
IR06-GW88UCH-15C	1507154-01	water	X
IR06-GW92LCH-15C	1507154-02	water	X
IR06-GW92LCHD-15C	1507154-03	water	X
IR06-EB-071315	1507154-04	water	X
IR82-GW26-15C	1507154-05	water	X
IR82-GW32UCH-15C	1507154-06	water	X
IR82-GW27-15C	1507154-07	water	X
IR82-GW33UCH-15C	1507154-08	water	X
IR82-GW28-15C	1507154-09	water	X
IR82-GW34UCH-15C	1507154-10	water	X
IR82-GW25UCH-15C	1507154-11	water	X
IR82-GW24-15C	1507154-12	water	X
IR06-GW81-15C	1507154-13	water	X
IR06-GW82UCH-15C	1507154-14	water	X
IR06-GW89UCH-15C	1507154-15	water	X
IR82-GW37UCH-15C	1507154-16	water	X
IR82-GW29-15C	1507154-17	water	X
IR82-GW38UCH-15C	1507154-18	water	X
IR82-GW38UCHD-15C	1507154-19	water	X
IR82-GW30-15C	1507154-20	water	X
IR82-GW30D-15C	1507154-21	water	X
IR06-GW100UCH-15C	1507154-22	water	X
IR82-GW35UCH-15C	1507154-23	water	X
IR82-GW41LCH-15C	1507154-24	water	X
IR06-GW98LCH-15C	1507154-25	water	X
IR82-GW42LCH-15C	1507154-26	water	X
IR06-GW94-15C	1507154-27	water	X
IR06-GW95-15C	1507154-28	water	X
IR06-GW97UCH-15C	1507154-29	water	X
IR06-GW97UCHD-15C	1507154-30	water	X
IR82-EB-071715	1507154-31	water	X

Sample ID	Lab ID	Matrix	VOA
IR06-IR82-TB01-071715	1507154-32	water	X
IR06-IR82-TB02-071715	1507154-33	water	X
IR06-GW95-15C MS	1507154-28MS	water	X
IR06-GW95-15C MSD	1507154-28MSD	water	X
IR06-GW88UCH-15C MS	1507154-01MS	water	X
IR06-GW88UCH-15C MSD	1507154-01MSD	water	X

The following quality control samples were provided with this SDG: sample IR82-GW38UCHD-15C – field duplicate of sample IR82-GW38UCH-15C; sample IR82-GW30D-15C- field duplicate of sample IR82-GW30-15C; samples IR06-EB-071315 and IR82-EB071715- equipment blanks; samples IR06-IR82-TB01-071715 and IR06-IR82-TB02-071715- trip blanks.

The samples were evaluated based on the following criteria:

- Data Completeness \*
- Technical Holding Times \*
- GC/MS Tunes \*
- Initial/Continuing Calibrations
- Blanks \*
- Internal Standards \*
- Surrogates \*
- Laboratory Control Samples \*
- Matrix Spike Recoveries
- Matrix Spike Duplicate RPDs \*
- Field Duplicates
- Identification/Quantitation \*
- Reporting Limits \*

\* - indicates that no qualifications were required based on this criteria

### **Overall Evaluation of Data/Potential Usability Issues**

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

## **VOA**

Qualifications were required based on non-compliant %RSD and %D which were exhibited in the initial and continuing calibrations.

Due to blank contamination qualifications were added to the data.

One of the field duplicate pairs did not exhibit comparable results which resulted in qualifications to the data.

## **Specific Evaluation of Data**

### **Data Completeness**

Resubmissions were not required.

### **Technical Holding Times**

According to chain of custody records, sampling was performed on 7/13-17/15 and samples were received at the laboratory between 7/18/15. All sample preparation and analysis was performed within method holding time requirements.

### **Initial/Continuing Calibration**

#### **VOA**

Calibration standards exhibited %RSD and %D that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results were qualified as indicated.

<b>Standard ID</b>	<b>Compound</b>	<b>%RSD, %D</b>	<b>Samples</b>	<b>Q Flag</b>	<b>Q Code</b>
IC 7/20/15	bromoform	19.58			
MS-VOA6	chloroethane	37.52	IR06-EB07-1315	J/UJ	ICH
	1,2-dibromo-3-chloropropane	20.17			
	cis-1,3-dichloropropene	16.27			
	2-hexanone	15.37			
	isopropylbenzene	18.2			
	styrene	22.07			

<b>Standard ID</b>	<b>Compound</b>	<b>%RSD, %D</b>	<b>Samples</b>	<b>Q Flag</b>	<b>Q Code</b>
CC 7/23/15 MS-VOA6	benzene	24.5	IR06-EB07-1315	J/UJ	CCH
	bromodichloromethane	28.4			
	bromomethane	25.3			
	carbon tetrachloride	35.2			
	chlorobenzene	26.6			
	chloroethane	24.3			
	chloromethane	22.7			
	cyclohexane	30.4			
	dibromochloromethane	30.0			
	1,2-dibromoethane (EDB)	25.9			
	1,2-dichlorobenzene	24.2			
	1,3-dichlorobenzene	23.3			
	1,4-dichlorobenzene	22.9			
	dichlorodifluoromethane	40.8			
	1,2-dichloroethane	22.1			
	1,1-dichloroethene	23.2			
	cis-1,2-dichloroethene	26.8			
	1,2-dichloropropane	25.3			
	trans-1,3-dichloropropene	30.5			
	ethylbenzene	34.2			
	methylcyclohexane	30.7			
	4-methyl-2-pentanone	29.0			
	tetrachloroethene	25.5			
	toluene	27.6			
	1,2,4-trichlorobenzene	22.6			
	1,1,2-trichloroethane	23.1			
	1,1,1-trichloroethane	28.0			
	trichloroethene	25.1			
	trichlorofluoromethane	24.2			
	1,1,2-trichloro-1,2,2-trifluoroethane	24.4			
	vinyl chloride	30.7			
	m,p-xylene	44.3			
	o-xylene	33.9			
	xylene (total)	40.7			
CC 7/23/15 MS-VOA6	benzene	24.5	IR06-GW88UCH-15C,	J/UJ	CCH
	chlorobenzene	26.6	IR06-GW92LCH-15C,		
	chloromethane	22.7	IR06-GW92LCHD-15C,		
	1,4-dichlorobenzene	22.9	IR82-GW26-15C,		
	1,2-dichloroethane	22.1	IR82-GW32UCH-15C,		
	1,2-dichloropropane	25.3	IR82-GW27-15C,		
	1,1-dichloroethene	23.2	IR82-GW33UCH-15C,		
	ethylbenzene	34.2	IR06-GW81-15C,		
	tetrachloroethene	25.5	IR82-GW24-15C,		
	trichloroethene	25.1	IR82-GW34UCH-15C,		
	vinyl chloride	30.7	IR82-GW28-15C		
	cis-1,2-dichloroethene	26.8			
	1,1,2-trichloroethane	23.1			

<b>Standard ID</b>	<b>Compound</b>	<b>%RSD, %D</b>	<b>Samples</b>	<b>Q Flag</b>	<b>Q Code</b>
IC 7/20/15 MS-VOA3	bromomethane chloroethane methyl acetate 1,2,4-trichlorobenzene	23.02 24.31 27.54 19.51	IR06-IR82-TB01-071715, IR06-IR82-TB02-071715, IR82-EB-071715, IR06-GW94-15C, IR06-GW97UCH-15C, IR06-GW97UCHD-15C, IR06-GW95-15C	J/UJ	ICH
CC 7/27/15 MS-VOA3	chloromethane	21.6	IR82-GW25UCH-15C, IR06-GW82UCH-15C, IR06-GW89UCH-15C, IR82-GW37UCH-15C, IR82-GW29-15C	J/UJ	CCH

## Blanks

### VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

<b>Blank ID</b>	<b>Compound</b>	<b>Concentration</b>	<b>Reporting Limit (LOD)</b>
IR06-EB071315	acetone	8.69 ug/L	5.0
IR82-EB-071715	acetone	3.58	5.0

Associated samples and required qualifications are noted in the following table.

<b>Sample ID</b>	<b>Compound</b>	<b>Q Flag</b>	<b>Qual Code</b>
IR06-GW97UCH-15C, IR06-GW97UCHD-15C	acetone	U at LOD	EBL

## Field Duplicates

### VOA

The field duplicate pairs exhibited non-compliant RPDs (>20%) that resulted in qualifications as noted in the following table.

<b>Field Duplicate Pair</b>	<b>Compound</b>	<b>% RPD</b>	<b>Qualifier</b>	<b>Q Code</b>
IR06-GW92LCH-15C/IR06-GW92LCHD-15C	chloroform	81	J	FD

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

A handwritten signature in blue ink, appearing to read "Laura Maschhoff".

Laura Maschhoff  
President

## Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
IR06-EB07-1315	bromoform chloroethane 1,2-dibromo-3-chloropropane cis-1,3-dichloropropene 2-hexanone isopropylbenzene styrene	+/-	J/UJ	ICH
IR06-EB07-1315	benzene bromodichloromethane bromomethane carbon tetrachloride chlorobenzene chloroethane* chloromethane cyclohexane dibromochloromethane 1,2-dibromoethane (EDB) 1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene dichlorodifluoromethane 1,2-dichloroethane 1,1-dichloroethene cis-1,2-dichloroethene 1,2-dichloropropane trans-1,3-dichloropropene ethylbenzene methylcyclohexane 4-methyl-2-pentanone tetrachloroethene toluene 1,2,4-trichlorobenzene 1,1,2-trichloroethane 1,1,1-trichloroethane trichloroethene trichlorofluoromethane 1,1,2-trichloro-1,2,2-trifluoroethane vinyl chloride m,p-xylene o-xylene xylene (total)	+/-	J/UJ	CCH

Sample ID	Compound	Results	Q-Flag	Q Code
IR06-GW88UCH-15C, IR06-GW92LCH-15C, IR06-GW92LCHD-15C, IR82-GW26-15C, IR82-GW32UCH-15C, IR82-GW27-15C, IR82-GW33UCH-15C, IR06-GW81-15C, IR82-GW24-15C, IR82-GW34UCH-15C, IR82-GW28-15C	benzene chlorobenzene chloromethane 1,4-dichlorobenzene 1,2-dichloroethane 1,2-dichloropropane 1,1-dichloroethene ethylbenzene tetrachloroethene trichloroethene vinyl chloride cis-1,2-dichloroethene 1,1,2-trichloroethane	+/-	J/UJ	CCH
IR06-IR82-TB01-071715, IR06-IR82-TB02-071715, IR82-EB-071715, IR06-GW94-15C, IR06-GW97UCH-15C, IR06-GW97UCHD-15C, IR06-GW95-15C	bromomethane chloroethane methyl acetate 1,2,4-trichlorobenzene	+/-	J/UJ	ICH
IR82-GW25UCH-15C, IR06-GW82UCH-15C, IR06-GW89UCH-15C, IR82-GW37UCH-15C, IR82-GW29-15C	chloromethane	+/-	J/UJ	CCH
IR06-GW97UCH-15C, IR06-GW97UCHD-15C	acetone	+	U at LOD	EBL
IR06-GW92LCH-15C/IR06-GW92LCHD-15C	chloroform	+	J	FD

\*final qualifier due to non-compliant initial calibration result

## **Glossary of Qualification Flags and Abbreviations**

### **Qualification Flags (Q-Flags)**

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
NJ	analyte has been tentatively identified, estimated value
L/J-	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K/J+	analyte present, biased high

### **Inorganic Field/Lab Blank Qualification Flags (Q-Flags)**

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 10X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL and the result is raised to the RL and flagged U.
R or J <sub>+</sub>	The blank contaminant concentration was greater than the RL and the sample result is greater than the RL but less than 10X the blank contaminant concentration. The reported results are flagged either as rejected R or biased high J <sub>+</sub> based on the professional judgment of the validator.

### **Organic Field/Lab Blank Qualification Flags (Q-Flags)**

NA	The sample result for the blank contaminant is greater than the sample RL. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL, so the result is raised to the RL and flagged U.

### **General Abbreviations**

RL	reporting limit
DL	detection limit
LOD	limit of detection
LOQ	limit of quantitation
Q Code	qualifier code
+ / -	positive result/non-detect result

## **QUALIFIER CODE REFERENCE**

<b>Qualifier</b>	<b>Description</b>
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
CC	Continuing Calibration
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination (MBL, EBL, FBL, TBL)
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High moisture content

# ANALYSIS DATA SHEET

IR06-GW88UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-01 File ID: 0715401B.D  
 Sampled: 07/13/15 15:05 Prepared: 07/23/15 12:05 Analyzed: 07/23/15 12:05  
 Solids: Preparation: S030B Dilution: 1  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	<b>0.981</b>	0.250	0.500	1.00	<i>/ JCCH</i>
108-90-7	Chlorobenzene		0.250	0.500	1.00	<i>/ VJCCH</i>
67-66-3	Chloroform	<b>4.75</b>	0.250	0.500	1.00	
74-87-3	Chloromethane		0.250	0.500	1.00	
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	<i>/ VJCCH</i>
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	<i>/ U</i>
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	<i>/ U</i>
156-59-2	cis-1,2-Dichloroethene	<b>29.5</b>	0.250	0.500	1.00	<i>/ U</i>
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	<i>/ JCCH</i>
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	<i>/ U</i>
100-41-4	Ethylbenzene		0.250	0.500	1.00	<i>/ VJCCH</i>
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	<i>/ VJCCH</i>
127-18-4	Tetrachloroethene		0.250	0.500	1.00	<i>/ U</i>
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	<i>/ VJCCH</i>
79-01-6	Trichloroethene		0.250	0.500	1.00	<i>/ U</i>
75-01-4	Vinyl chloride	<b>0.949</b>	0.250	0.500	1.00	<i>/ JCCH</i>

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.99	96.6	85 - 114	
Dibromofluoromethane	30.00	30.09	100	80 - 119	
1,2-Dichloroethane-d4	30.00	29.56	98.5	81 - 118	
Toluene-d8	30.00	29.16	97.2	89 - 112	

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# ANALYSIS DATA SHEET

IR06-GW92LCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-02 File ID: 0715402B.D  
 Sampled: 07/13/15 16:30 Prepared: 07/23/15 13:02 Analyzed: 07/23/15 13:02  
 Solids: Preparation: 5030B Dilution: 2  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.500	1.00	2.00	U ✓ USCCH
108-90-7	Chlorobenzene		0.500	1.00	2.00	U ✓ USCUT
67-66-3	Chloroform	1.29	0.500	1.00	2.00	U ✓ JFD
74-87-3	Chloromethane		0.500	1.00	2.00	U ✓ USCCH
106-46-7	1,4-Dichlorobenzene		0.500	1.00	2.00	U ✓
107-06-2	1,2-Dichloroethane		0.500	1.00	2.00	U ✓
75-35-4	1,1-Dichloroethene		0.500	1.00	2.00	U ✓
156-59-2	cis-1,2-Dichloroethene	0.623	0.500	1.00	2.00	U ✓ USCCT
156-60-5	trans-1,2-Dichloroethene		0.500	1.00	2.00	U ✓
78-87-5	1,2-Dichloropropane		0.500	1.00	2.00	U ✓ USCCH
100-41-4	Ethylbenzene		0.500	1.00	2.00	U ✓ USCCH
79-34-5	1,1,2,2-Tetrachloroethane		0.500	1.00	2.00	U ✓
127-18-4	Tetrachloroethene		0.500	1.00	2.00	U ✓ USCCH
79-00-5	1,1,2-Trichloroethane		0.500	1.00	2.00	U ✓
79-01-6	Trichloroethene		0.500	1.00	2.00	U ✓
75-01-4	Vinyl chloride		0.500	1.00	2.00	U ✓

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.19	97.3	85 - 114	
Dibromofluoromethane	30.00	29.74	99.1	80 - 119	
1,2-Dichloroethane-d4	30.00	29.86	99.5	81 - 118	
Toluene-d8	30.00	29.34	97.8	89 - 112	

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# ANALYSIS DATA SHEET

IR06-GW92LCHD-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-03 File ID: 0715403B.D  
 Sampled: 07/13/15 16:35 Prepared: 07/23/15 13:31 Analyzed: 07/23/15 13:31  
 Solids: Preparation: 5030B Dilution: 2  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.500	1.00	2.00	<u>U</u>
108-90-7	Chlorobenzene		0.500	1.00	2.00	<u>U</u>
67-66-3	Chloroform	<u>0.547</u>	0.500	1.00	2.00	<u>U</u>
74-87-3	Chloromethane		0.500	1.00	2.00	<u>U</u>
106-46-7	1,4-Dichlorobenzene		0.500	1.00	2.00	<u>U</u>
107-06-2	1,2-Dichloroethane		0.500	1.00	2.00	<u>U</u>
75-35-4	1,1-Dichloroethene		0.500	1.00	2.00	<u>U</u>
156-59-2	cis-1,2-Dichloroethene	<u>0.589</u>	0.500	1.00	2.00	<u>U</u>
156-60-5	trans-1,2-Dichloroethene		0.500	1.00	2.00	<u>U</u>
78-87-5	1,2-Dichloropropane		0.500	1.00	2.00	<u>U</u>
100-41-4	Ethylbenzene		0.500	1.00	2.00	<u>U</u>
79-34-5	1,1,2,2-Tetrachloroethane		0.500	1.00	2.00	<u>U</u>
127-18-4	Tetrachloroethene		0.500	1.00	2.00	<u>U</u>
79-00-5	1,1,2-Trichloroethane		0.500	1.00	2.00	<u>U</u>
79-01-6	Trichloroethene		0.500	1.00	2.00	<u>U</u>
75-01-4	Vinyl chloride		0.500	1.00	2.00	<u>U</u>

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.26	97.5	85 - 114	
Dibromofluoromethane	30.00	29.36	97.9	80 - 119	
1,2-Dichloroethane-d4	30.00	28.55	95.2	81 - 118	
Toluene-d8	30.00	30.25	101	89 - 112	

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1507154 Summ Package

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## ANALYSIS DATA SHEET

IR06-EB-071315

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-04 File ID: 0715404A.D  
 Sampled: 07/13/15 16:20 Prepared: 07/23/15 11:36 Analyzed: 07/23/15 11:36  
 Solids: Preparation: 5030B Dilution: 1

Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	<b>8.69</b>	2.50	5.00	10.0	J
71-43-2	Benzene		0.250	0.500	1.00	X VS CCH
75-27-4	Bromodichloromethane		0.250	0.500	1.00	X VS CCH
75-25-2	Bromoform		0.250	0.500	1.00	X VS CCH
74-83-9	Bromomethane		0.500	1.00	2.00	X VS CCH
78-93-3	2-Butanone		2.50	5.00	10.0	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	X VS CCH
108-90-7	Chlorobenzene		0.250	0.500	1.00	X VS CCH
75-00-3	Chloroethane		0.500	1.00	2.00	X VS CCH
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	X VS CCH
110-82-7	Cyclohexane		0.250	0.500	1.00	X VS CCH
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U VS CCH
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	X VS CCH
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	X VS CCH
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	X
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	X
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	X
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	X VS CCH
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	X
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	X
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	X VS CCH
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	X VS CCH
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	X VS CCH
100-41-4	Ethylbenzene		0.250	0.500	1.00	X VS CCH
591-78-6	2-Hexanone		1.25	2.50	5.00	X VS CCH
98-82-8	Isopropylbenzene		0.250	0.500	1.00	X VS CCH
75-09-2	Methylene chloride	<b>6.71</b>	0.500	1.00	2.00	
79-20-9	Methyl Acetate		0.500	1.00	2.00	U
108-87-2	Methylcyclohexane		0.250	0.500	1.00	X VS CCH
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	X VS CCH
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
100-42-5	Styrene		0.250	0.500	1.00	X VS CCH
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	X VS CCH

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08/30/15

# ANALYSIS DATA SHEET

IR06-EB-071315

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-04 File ID: 0715404A.D  
 Sampled: 07/13/15 16:20 Prepared: 07/23/15 11:36 Analyzed: 07/23/15 11:36  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
108-88-3	Toluene	<b>13.4</b>	0.250	0.500	1.00	
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	<i>✓</i>
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	<i>✓</i>
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	<i>✓</i>
79-01-6	Trichloroethylene		0.250	0.500	1.00	<i>✓</i>
75-69-4	Trichlorofluoromethane		0.250	0.500	1.00	<i>✓</i>
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	<i>✓</i>
75-01-4	Vinyl chloride		0.250	0.500	1.00	<i>✓</i>
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	<i>✓</i>
95-47-6	o-Xylene		0.250	0.500	1.00	<i>✓</i>
1330-20-7	Xylenes (total)		0.750	1.50	3.00	<i>✓</i>

Total Target Analytes Reported: 51 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.13	97.1	85 - 114	
Dibromofluoromethane	30.00	29.42	98.1	80 - 119	
1,2-Dichloroethane-d4	30.00	29.11	97.0	81 - 118	
Toluene-d8	30.00	29.20	97.3	89 - 112	

## ANALYSIS DATA SHEET

IR82-GW26-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-05 File ID: 0715405B.D  
 Sampled: 07/14/15 10:25 Prepared: 07/23/15 14:00 Analyzed: 07/23/15 14:00  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	<b>2.76</b>	0.250	0.500	1.00	<i>JCCat</i>
108-90-7	Chlorobenzene		0.250	0.500	1.00	<i>X VSCCat</i>
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	<i>X VSCCat</i>
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	<i>X</i>
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	<i>X</i>
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	<i>X</i>
156-59-2	cis-1,2-Dichloroethene	<b>1.21</b>	0.250	0.500	1.00	<i>JCCat</i>
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	<i>X VSCCat</i>
100-41-4	Ethylbenzene		0.250	0.500	1.00	<i>X VSCCat</i>
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	<i>X VSCCat</i>
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	<i>X</i>
79-01-6	Trichloroethene		0.250	0.500	1.00	<i>X</i>
75-01-4	Vinyl chloride		0.250	0.500	1.00	<i>X</i>

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.71	95.7	85 - 114	
Dibromofluoromethane	30.00	30.30	101	80 - 119	
1,2-Dichloroethane-d4	30.00	29.88	99.6	81 - 118	
Toluene-d8	30.00	29.07	96.9	89 - 112	

# ANALYSIS DATA SHEET

IR82-GW32UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-06 File ID: 0715406B.D  
 Sampled: 07/14/15 10:45 Prepared: 07/23/15 14:29 Analyzed: 07/23/15 14:29  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U ✓ UCCCH
108-90-7	Chlorobenzene		0.250	0.500	1.00	✓ UCCCH
67-66-3	Chloroform	6.98	0.250	0.500	1.00	
74-87-3	Chloromethane		0.250	0.500	1.00	
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	✓ UCCCH
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U ✓
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U ✓
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U ✓
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U ✓
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U ✓
100-41-4	Ethylbenzene		0.250	0.500	1.00	U ✓
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	✓ UCCCH
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U ✓
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	✓ UCCCH
79-01-6	Trichloroethene		0.250	0.500	1.00	U ✓
75-01-4	Vinyl chloride		0.250	0.500	1.00	U ✓

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.17	97.2	85 - 114	
Dibromofluoromethane	30.00	31.21	104	80 - 119	
1,2-Dichloroethane-d4	30.00	29.93	99.8	81 - 118	
Toluene-d8	30.00	29.60	98.7	89 - 112	

## ANALYSIS DATA SHEET

IR82-GW27-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-07 File ID: 0715407B.D  
 Sampled: 07/14/15 12:35 Prepared: 07/23/15 14:58 Analyzed: 07/23/15 14:58  
 Solids: Preparation: 5030B Dilution: 1

Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	<b>0.407</b>	0.250	0.500	1.00	J JCCT
108-90-7	Chlorobenzene		0.250	0.500	1.00	U JCCT
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U JCCT
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U JCCT
100-41-4	Ethylbenzene		0.250	0.500	1.00	U JCCT
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U JCCT
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.01	96.7	85 - 114	
Dibromofluoromethane	30.00	30.61	102	80 - 119	
1,2-Dichloroethane-d4	30.00	29.47	98.2	81 - 118	
Toluene-d8	30.00	29.02	96.7	89 - 112	

# ANALYSIS DATA SHEET

IR82-GW33UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-08 File ID: 0715408B.D  
 Sampled: 07/14/15 12:45 Prepared: 07/23/15 15:27 Analyzed: 07/23/15 15:27  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	<u>U</u> ✓✓✓✓
108-90-7	Chlorobenzene		0.250	0.500	1.00	<u>U</u> ✓✓✓✓
67-66-3	Chloroform	<u>2.54</u>	0.250	0.500	1.00	
74-87-3	Chloromethane		0.250	0.500	1.00	
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	<u>U</u> ✓✓✓✓
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	<u>U</u>
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	<u>U</u>
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	<u>U</u>
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	<u>U</u>
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	<u>U</u>
100-41-4	Ethylbenzene		0.250	0.500	1.00	<u>U</u> ✓✓✓✓
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	<u>U</u> ✓✓✓✓
127-18-4	Tetrachloroethene		0.250	0.500	1.00	<u>U</u>
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	<u>U</u> ✓✓✓✓
79-01-6	Trichloroethene		0.250	0.500	1.00	<u>U</u>
75-01-4	Vinyl chloride		0.250	0.500	1.00	<u>U</u>

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.78	95.9	85 - 114	
Dibromofluoromethane	30.00	30.55	102	80 - 119	
1,2-Dichloroethane-d4	30.00	31.24	104	81 - 118	
Toluene-d8	30.00	28.89	96.3	89 - 112	

## ANALYSIS DATA SHEET

IR82-GW28-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-09 File ID: 0715409B.D  
 Sampled: 07/14/15 14:56 Prepared: 07/23/15 17:51 Analyzed: 07/23/15 17:51  
 Solids: Preparation: 5030B Dilution: 200  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		50.0	100	200	U ✓CCat
108-90-7	Chlorobenzene		50.0	100	200	U ✓CCat
67-66-3	Chloroform		50.0	100	200	U
74-87-3	Chloromethane		50.0	100	200	U ✓CCat
106-46-7	1,4-Dichlorobenzene		50.0	100	200	U
107-06-2	1,2-Dichloroethane		50.0	100	200	U
75-35-4	1,1-Dichloroethene		50.0	100	200	U
156-59-2	cis-1,2-Dichloroethene	<b>1670</b>	50.0	100	200	D ✓CCat
156-60-5	trans-1,2-Dichloroethene	<b>113</b>	50.0	100	200	JD
78-87-5	1,2-Dichloropropane		50.0	100	200	U ✓CCat
100-41-4	Ethylbenzene		50.0	100	200	U ✓CCat
79-34-5	1,1,2,2-Tetrachloroethane	<b>1360</b>	50.0	100	200	D
127-18-4	Tetrachloroethene	<b>26500</b>	50.0	100	200	D ✓CCat
79-00-5	1,1,2-Trichloroethane	<b>52.1</b>	50.0	100	200	JD ✓CCat
79-01-6	Trichloroethene	<b>2660</b>	50.0	100	200	D ✓CCat
75-01-4	Vinyl chloride		50.0	100	200	U ✓CCat

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.80	96.0	85 - 114	
Dibromofluoromethane	30.00	31.27	104	80 - 119	
1,2-Dichloroethane-d4	30.00	29.39	98.0	81 - 118	
Toluene-d8	30.00	28.63	95.4	89 - 112	

# ANALYSIS DATA SHEET

IR82-GW34UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-10 File ID: 0715410B.D  
 Sampled: 07/14/15 15:26 Prepared: 07/23/15 17:22 Analyzed: 07/23/15 17:22  
 Solids: Preparation: 5030B Dilution: 50  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		12.5	25.0	50.0	<u>✓ USCAT</u>
108-90-7	Chlorobenzene		12.5	25.0	50.0	<u>✓ USCAT</u>
67-66-3	Chloroform		12.5	25.0	50.0	<u>✓ U</u>
74-87-3	Chloromethane		12.5	25.0	50.0	<u>✓ U</u>
106-46-7	1,4-Dichlorobenzene		12.5	25.0	50.0	<u>✓ USCAT</u>
107-06-2	1,2-Dichloroethane		12.5	25.0	50.0	<u>✓ U</u>
75-35-4	1,1-Dichloroethene		12.5	25.0	50.0	<u>✓ U</u>
156-59-2	cis-1,2-Dichloroethene	3030	12.5	25.0	50.0	<u>✓ U</u>
156-60-5	trans-1,2-Dichloroethene	897	12.5	25.0	50.0	<u>✓ JCCAT</u>
78-87-5	1,2-Dichloropropane		12.5	25.0	50.0	<u>✓ D</u>
100-41-4	Ethylbenzene		12.5	25.0	50.0	<u>✓ USCAT</u>
79-34-5	1,1,2,2-Tetrachloroethane		12.5	25.0	50.0	<u>✓ USCAT</u>
127-18-4	Tetrachloroethene	259	12.5	25.0	50.0	<u>U</u>
79-00-5	1,1,2-Trichloroethane	13.2	12.5	25.0	50.0	<u>✓ JCCAT</u>
79-01-6	Trichloroethene	6640	12.5	25.0	50.0	<u>JD</u>
75-01-4	Vinyl chloride	41.5	12.5	25.0	50.0	<u>JD</u>

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.37	94.6	85 - 114	
Dibromo fluromethane	30.00	30.60	102	80 - 119	
1,2-Dichloroethane-d4	30.00	30.00	100	81 - 118	
Toluene-d8	30.00	28.86	96.2	89 - 112	

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1507154 Summ Package

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# ANALYSIS DATA SHEET

IR82-GW25UCH-15C

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>1507154-11RE1</u>
Sampled:	<u>07/14/15 16:36</u>	Prepared:	<u>07/27/15 12:07</u>
Solids:		Preparation:	<u>5030B</u>
Batch:	<u>5G27014</u>	Sequence:	<u>5G20905</u>
		Calibration:	<u>5204001</u>
		Instrument:	<u>MS-VOA3</u>

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane	<b>0.250</b>	0.250	0.500	1.00	J cat
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>73.3</b>	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	<b>13.0</b>	0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	<b>0.433</b>	0.250	0.500	1.00	J
127-18-4	Tetrachloroethene	<b>8.48</b>	0.250	0.500	1.00	
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	<b>71.2</b>	0.250	0.500	1.00	
75-01-4	Vinyl chloride	<b>3.03</b>	0.250	0.500	1.00	

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.39	94.6	85 - 114	
Dibromofluoromethane	30.00	28.26	94.2	80 - 119	
1,2-Dichloroethane-d4	30.00	28.84	96.1	81 - 118	
Toluene-d8	30.00	29.78	99.3	89 - 112	

WM  
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# ANALYSIS DATA SHEET

IR82-GW24-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-12 File ID: 0715412B.D  
 Sampled: 07/14/15 16:40 Prepared: 07/23/15 16:53 Analyzed: 07/23/15 16:53  
 Solids: Preparation: 5030B Dilution: 10  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		2.50	5.00	10.0	✓ UJCCAT
108-90-7	Chlorobenzene		2.50	5.00	10.0	✓ UJCCAT
67-66-3	Chloroform	5.87	2.50	5.00	10.0	JD
74-87-3	Chloromethane		2.50	5.00	10.0	✓ UJCCAT
106-46-7	1,4-Dichlorobenzene		2.50	5.00	10.0	U
107-06-2	1,2-Dichloroethane		2.50	5.00	10.0	U
75-35-4	1,1-Dichloroethene		2.50	5.00	10.0	U
156-59-2	cis-1,2-Dichloroethene	130	2.50	5.00	10.0	✓
156-60-5	trans-1,2-Dichloroethene	8.22	2.50	5.00	10.0	✓ JCCAT
78-87-5	1,2-Dichloropropane		2.50	5.00	10.0	JD
100-41-4	Ethylbenzene		2.50	5.00	10.0	✓ UJCCAT
79-34-5	1,1,2,2-Tetrachloroethane	645	2.50	5.00	10.0	✓ UJCCAT
127-18-4	Tetrachloroethene	819	2.50	5.00	10.0	P
79-00-5	1,1,2-Trichloroethane	2.77	2.50	5.00	10.0	P JCCAT
79-01-6	Trichloroethene	64.0	2.50	5.00	10.0	JD
75-01-4	Vinyl chloride		2.50	5.00	10.0	P U

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.58	95.3	85 - 114	
Dibromofluoromethane	30.00	31.17	104	80 - 119	
1,2-Dichloroethane-d4	30.00	30.21	101	81 - 118	
Toluene-d8	30.00	28.46	94.9	89 - 112	

## ANALYSIS DATA SHEET

IR06-GW81-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-13 File ID: 0715413B.D  
 Sampled: 07/15/15 10:20 Prepared: 07/23/15 15:55 Analyzed: 07/23/15 15:55  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G23007 Sequence: 5G20505 Calibration: 5202001 Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	<b>0.329</b>	0.250	0.500	1.00	J ✓CCt
108-90-7	Chlorobenzene		0.250	0.500	1.00	J ✓U✓CCt
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	J ✓U✓CCt
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	J ✓
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	J ✓
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	J ✓
156-59-2	cis-1,2-Dichloroethene	<b>19.4</b>	0.250	0.500	1.00	J ✓CCt
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	J ✓U✓CCt
100-41-4	Ethylbenzene		0.250	0.500	1.00	J ✓U✓CCt
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	J ✓CCH
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	J ✓U✓CCt
79-01-6	Trichloroethene	<b>0.471</b>	0.250	0.500	1.00	J ✓CCt
75-01-4	Vinyl chloride		0.250	0.500	1.00	J ✓U✓CCt

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.83	96.1	85 - 114	
Dibromofluoromethane	30.00	31.03	103	80 - 119	
1,2-Dichloroethane-d4	30.00	29.30	97.7	81 - 118	
Toluene-d8	30.00	28.74	95.8	89 - 112	

# ANALYSIS DATA SHEET

IR06-GW82UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-14 File ID: 0715414B.D  
 Sampled: 07/15/15 11:40 Prepared: 07/27/15 12:32 Analyzed: 07/27/15 12:32  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G27014 Sequence: 5G20905 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	<b>2.24</b>	0.250	0.500	1.00	
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>47.4</b>	0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane	<b>0.495</b>	0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	J
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	<b>0.317</b>	0.250	0.500	1.00	U
75-01-4	Vinyl chloride	<b>1.25</b>	0.250	0.500	1.00	J

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	27.48	91.6	85 - 114	
Dibromofluoromethane	30.00	28.83	96.1	80 - 119	
1,2-Dichloroethane-d4	30.00	28.57	95.2	81 - 118	
Toluene-d8	30.00	29.25	97.5	89 - 112	

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# ANALYSIS DATA SHEET

IR06-GW89UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-15 File ID: 0715415B.D  
 Sampled: 07/15/15 12:00 Prepared: 07/27/15 12:57 Analyzed: 07/27/15 12:57  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G27014 Sequence: 5G20905 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	<b>1.12</b>	0.250	0.500	1.00	
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform	<b>0.411</b>	0.250	0.500	1.00	J
74-87-3	Chloromethane		0.250	0.500	1.00	<i>✓ US Cut</i>
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>49.6</b>	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	<b>1.45</b>	0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-01-4	Vinyl chloride	<b>2.59</b>	0.250	0.500	1.00	

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.81	96.0	85 - 114	
Dibromofluoromethane	30.00	28.84	96.1	80 - 119	
1,2-Dichloroethane-d4	30.00	29.17	97.2	81 - 118	
Toluene-d8	30.00	30.68	102	89 - 112	

# ANALYSIS DATA SHEET

IR82-GW37UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-16 File ID: 0715416B.D  
 Sampled: 07/15/15 14:41 Prepared: 07/27/15 13:22 Analyzed: 07/27/15 13:22  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G27014 Sequence: 5G20905 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform	<b>0.324</b>	0.250	0.500	1.00	J
74-87-3	Chloromethane		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	UVICAT
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>17.5</b>	0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene	<b>3.42</b>	0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	<b>8.43</b>	0.250	0.500	1.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.17	93.9	85 - 114	
Dibromofluoromethane	30.00	29.23	97.4	80 - 119	
1,2-Dichloroethane-d4	30.00	30.23	101	81 - 118	
Toluene-d8	30.00	30.58	102	89 - 112	

## ANALYSIS DATA SHEET

IR82-GW29-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-17 File ID: 0715417B.D  
 Sampled: 07/15/15 14:50 Prepared: 07/27/15 13:47 Analyzed: 07/27/15 13:47  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G27014 Sequence: 5G20905 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform	<b>0.295</b>	0.250	0.500	1.00	J
74-87-3	Chloromethane		0.250	0.500	1.00	✓ USCUT
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.31	97.7	85 - 114	
Dibromofluoromethane	30.00	28.30	94.3	80 - 119	
1,2-Dichloroethane-d4	30.00	29.43	98.1	81 - 118	
Toluene-d8	30.00	30.38	101	89 - 112	

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# ANALYSIS DATA SHEET

IR82-GW38UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-18 File ID: 0715418B.D  
 Sampled: 07/16/15 11:05 Prepared: 07/28/15 14:42 Analyzed: 07/28/15 14:42  
 Solids: Preparation: 5030B Dilution: 20  
 Batch: 5G28001 Sequence: 5G21016 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		5.00	10.0	20.0	U
108-90-7	Chlorobenzene		5.00	10.0	20.0	U
67-66-3	Chloroform		5.00	10.0	20.0	U
74-87-3	Chloromethane		5.00	10.0	20.0	U
106-46-7	1,4-Dichlorobenzene		5.00	10.0	20.0	U
107-06-2	1,2-Dichloroethane		5.00	10.0	20.0	U
75-35-4	1,1-Dichloroethene		5.00	10.0	20.0	U
156-59-2	cis-1,2-Dichloroethene	1430	5.00	10.0	20.0	U
156-60-5	trans-1,2-Dichloroethene	411	5.00	10.0	20.0	D
78-87-5	1,2-Dichloropropane		5.00	10.0	20.0	D
100-41-4	Ethylbenzene		5.00	10.0	20.0	U
79-34-5	1,1,2,2-Tetrachloroethane	735	5.00	10.0	20.0	U
127-18-4	Tetrachloroethene	529	5.00	10.0	20.0	D
79-00-5	1,1,2-Trichloroethane	22.5	5.00	10.0	20.0	D
79-01-6	Trichloroethene	2350	5.00	10.0	20.0	D
75-01-4	Vinyl chloride	21.6	5.00	10.0	20.0	D

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.22	94.1	85 - 114	
Dibromofluoromethane	30.00	29.63	98.8	80 - 119	
1,2-Dichloroethane-d4	30.00	28.11	93.7	81 - 118	
Toluene-d8	30.00	30.34	101	89 - 112	

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1507154 Summ Package

029

# ANALYSIS DATA SHEET

IR82-GW38UCHD-15C

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>1507154-19</u>
Sampled:	<u>07/16/15 11:10</u>	Prepared:	<u>07/28/15 15:07</u>
Solids:		Preparation:	<u>5030B</u>
Batch:	<u>5G28001</u>	Sequence:	<u>5G21016</u>
		Calibration:	<u>5204001</u>
			Instrument: <u>MS-VOA3</u>

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		5.00	10.0	20.0	U
108-90-7	Chlorobenzene		5.00	10.0	20.0	U
67-66-3	Chloroform		5.00	10.0	20.0	U
74-87-3	Chloromethane		5.00	10.0	20.0	U
106-46-7	1,4-Dichlorobenzene		5.00	10.0	20.0	U
107-06-2	1,2-Dichloroethane		5.00	10.0	20.0	U
75-35-4	1,1-Dichloroethene	<b>6.51</b>	5.00	10.0	20.0	JP
156-59-2	cis-1,2-Dichloroethene	<b>1380</b>	5.00	10.0	20.0	D
156-60-5	trans-1,2-Dichloroethene	<b>380</b>	5.00	10.0	20.0	D
78-87-5	1,2-Dichloropropane		5.00	10.0	20.0	D
100-41-4	Ethylbenzene		5.00	10.0	20.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<b>876</b>	5.00	10.0	20.0	D
127-18-4	Tetrachloroethene	<b>546</b>	5.00	10.0	20.0	D
79-00-5	1,1,2-Trichloroethane	<b>21.8</b>	5.00	10.0	20.0	D
79-01-6	Trichloroethene	<b>2200</b>	5.00	10.0	20.0	D
75-01-4	Vinyl chloride	<b>21.6</b>	5.00	10.0	20.0	D

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.37	94.6	85 - 114	
Dibromofluoromethane	30.00	29.29	97.6	80 - 119	
1,2-Dichloroethane-d4	30.00	30.15	100	81 - 118	
Toluene-d8	30.00	30.15	100	89 - 112	

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# ANALYSIS DATA SHEET

IR82-GW30-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-20 File ID: 0715420B.D  
 Sampled: 07/16/15 10:50 Prepared: 07/28/15 11:22 Analyzed: 07/28/15 11:22  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G28001 Sequence: 5G21016 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene	<b>1.14</b>	0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>15.7</b>	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	<b>3.11</b>	0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	<b>6.29</b>	0.250	0.500	1.00	U
75-01-4	Vinyl chloride	<b>0.399</b>	0.250	0.500	1.00	J

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.88	96.3	85 - 114	
Dibromofluoromethane	30.00	29.44	98.1	80 - 119	
1,2-Dichloroethane-d4	30.00	29.09	97.0	81 - 118	
Toluene-d8	30.00	31.01	103	89 - 112	

W  
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# ANALYSIS DATA SHEET

IR82-GW30D-15C

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>1507154-21</u>
Sampled:	<u>07/16/15 10:55</u>	Prepared:	<u>07/28/15 11:47</u>
Solids:		Preparation:	<u>5030B</u>
Batch:	<u>5G28001</u>	Sequence:	<u>5G21016</u>
		Calibration:	<u>5204001</u>
		Instrument:	<u>MS-VOA3</u>

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene	<b>1.06</b>	0.250	0.500	1.00	
156-59-2	cis-1,2-Dichloroethene	<b>16.2</b>	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	<b>2.77</b>	0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	<b>5.78</b>	0.250	0.500	1.00	
75-01-4	Vinyl chloride		0.250	0.500	1.00	U

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	26.86	89.5	85 - 114	
Dibromofluoromethane	30.00	29.83	99.4	80 - 119	
1,2-Dichloroethane-d4	30.00	30.37	101	81 - 118	
Toluene-d8	30.00	29.80	99.3	89 - 112	

MM  
08/30/15

# ANALYSIS DATA SHEET

IR06-GW100UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-22 File ID: 0715422B.D  
 Sampled: 07/16/15 13:10 Prepared: 07/28/15 12:12 Analyzed: 07/28/15 12:12  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G28001 Sequence: 5G21016 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	<b>0.439</b>	0.250	0.500	1.00	J
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform	<b>7.01</b>	0.250	0.500	1.00	
74-87-3	Chloromethane		0.250	0.500	1.00	
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>26.5</b>	0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	<b>23.9</b>	0.250	0.500	1.00	U
75-01-4	Vinyl chloride	<b>0.484</b>	0.250	0.500	1.00	J

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	27.64	92.1	85 - 114	
Dibromofluoromethane	30.00	28.85	96.2	80 - 119	
1,2-Dichloroethane-d4	30.00	28.81	96.0	81 - 118	
Toluene-d8	30.00	29.95	99.8	89 - 112	

W  
08/30/15

# ANALYSIS DATA SHEET

IR82-GW35UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-23 File ID: 0715423B.D  
 Sampled: 07/16/15 13:16 Prepared: 07/28/15 12:37 Analyzed: 07/28/15 12:37  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G28001 Sequence: 5G21016 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene	<b>3.31</b>	0.250	0.500	1.00	
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform	<b>0.304</b>	0.250	0.500	1.00	J
74-87-3	Chloromethane	<b>0.282</b>	0.250	0.500	1.00	J
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>46.3</b>	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	<b>7.82</b>	0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene	<b>4.34</b>	0.250	0.500	1.00	
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	<b>14.3</b>	0.250	0.500	1.00	
75-01-4	Vinyl chloride	<b>0.849</b>	0.250	0.500	1.00	J

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.98	96.6	85 - 114	
Dibromofluoromethane	30.00	29.19	97.3	80 - 119	
1,2-Dichloroethane-d4	30.00	27.93	93.1	81 - 118	
Toluene-d8	30.00	30.87	103	89 - 112	

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034

# ANALYSIS DATA SHEET

IR82-GW41LCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-24 File ID: 0715424B.D  
 Sampled: 07/16/15 15:45 Prepared: 07/28/15 13:02 Analyzed: 07/28/15 13:02  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G28001 Sequence: 5G21016 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
Total Target Analytes Reported: 16 Project Analytes: 51						

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.13	93.8	85 - 114	
Dibromofluoromethane	30.00	29.12	97.1	80 - 119	
1,2-Dichloroethane-d4	30.00	28.55	95.2	81 - 118	
Toluene-d8	30.00	30.73	102	89 - 112	

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# ANALYSIS DATA SHEET

IR06-GW98LCH-15C

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>1507154-25</u>
Sampled:	<u>07/16/15 16:30</u>	Prepared:	<u>07/29/15 11:47</u>
Solids:		Preparation:	<u>5030B</u>
Batch:	<u>5G29003</u>	Sequence:	<u>5G21106</u>
		Calibration:	<u>5204001</u>
		Instrument:	<u>MS-VOA3</u>

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>0.382</b>	0.250	0.500	1.00	J
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	27.94	93.1	85 - 114	
Dibromofluoromethane	30.00	29.48	98.3	80 - 119	
1,2-Dichloroethane-d4	30.00	29.17	97.2	81 - 118	
Toluene-d8	30.00	29.97	99.9	89 - 112	

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# ANALYSIS DATA SHEET

IR82-GW42LCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-26 File ID: 0715426.B.D  
 Sampled: 07/16/15 16:40 Prepared: 07/28/15 13:27 Analyzed: 07/28/15 13:27  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G28001 Sequence: 5G21016 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.250	0.500	1.00	U
108-90-7	Chlorobenzene	<b>0.291</b>	0.250	0.500	1.00	J
67-66-3	Chloroform	<b>5.36</b>	0.250	0.500	1.00	
74-87-3	Chloromethane		0.250	0.500	1.00	
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene	<b>5.72</b>	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U

Total Target Analytes Reported 16 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	27.66	92.2	85 - 114	
Dibromofluoromethane	30.00	28.28	94.3	80 - 119	
1,2-Dichloroethane-d4	30.00	30.39	101	81 - 118	
Toluene-d8	30.00	30.53	102	89 - 112	

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## ANALYSIS DATA SHEET

IR06-GW94-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-27 File ID: 0715427B.D  
 Sampled: 07/17/15 10:00 Prepared: 07/29/15 12:12 Analyzed: 07/29/15 12:12  
 Solids: Preparation: 5030B Dilution: 1

Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		2.50	5.00	10.0	U
71-43-2	Benzene		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	✓ VSICHT
78-93-3	2-Butanone		2.50	5.00	10.0	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	✓ VSICHT
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	U
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
591-78-6	2-Hexanone		1.25	2.50	5.00	U
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
75-09-2	Methylene chloride		0.500	1.00	2.00	U
79-20-9	Methyl Acetate		0.500	1.00	2.00	✓ VSICHT
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U

1507154 Summ Package

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# ANALYSIS DATA SHEET

IR06-GW94-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-27 File ID: 0715427B,D  
 Sampled: 07/17/15 10:00 Prepared: 07/29/15 12:12 Analyzed: 07/29/15 12:12  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
108-88-3	Toluene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	U
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethylene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported 51 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.69	95.6	85 - 114	
Dibromofluoromethane	30.00	29.53	98.4	80 - 119	
1,2-Dichloroethane-d4	30.00	28.31	94.4	81 - 118	
Toluene-d8	30.00	30.57	102	89 - 112	

## ANALYSIS DATA SHEET

IR06-GW95-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-28 File ID: 0715428B.D  
 Sampled: 07/17/15 10:01 Prepared: 07/29/15 15:32 Analyzed: 07/29/15 15:32  
 Solids: Preparation: 5030B Dilution: 20  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		50.0	100	200	U
71-43-2	Benzene		5.00	10.0	20.0	U
75-27-4	Bromodichloromethane		5.00	10.0	20.0	U
75-25-2	Bromoform		5.00	10.0	20.0	U
74-83-9	Bromomethane		10.0	20.0	40.0	X VSICAT
78-93-3	2-Butanone		50.0	100	200	U
75-15-0	Carbon disulfide		5.00	10.0	20.0	U
56-23-5	Carbon tetrachloride		5.00	10.0	20.0	U
108-90-7	Chlorobenzene	1120	5.00	10.0	20.0	ND
75-00-3	Chloroethane		10.0	20.0	40.0	X VSICAT
67-66-3	Chloroform	13.2	5.00	10.0	20.0	JD
74-87-3	Chloromethane		5.00	10.0	20.0	U
110-82-7	Cyclohexane		5.00	10.0	20.0	U
124-48-1	Dibromochloromethane		5.00	10.0	20.0	U
96-12-8	1,2-Dibromo-3-chloropropane		10.0	20.0	40.0	U
106-93-4	1,2-Dibromoethane (EDB)		5.00	10.0	20.0	U
95-50-1	1,2-Dichlorobenzene		5.00	10.0	20.0	U
541-73-1	1,3-Dichlorobenzene		5.00	10.0	20.0	U
106-46-7	1,4-Dichlorobenzene		5.00	10.0	20.0	U
75-71-8	Dichlorodifluoromethane		10.0	20.0	40.0	U
75-34-3	1,1-Dichloroethane		5.00	10.0	20.0	U
107-06-2	1,2-Dichloroethane		5.00	10.0	20.0	U
75-35-4	1,1-Dichloroethene		5.00	10.0	20.0	U
156-59-2	cis-1,2-Dichloroethene		5.00	10.0	20.0	U
156-60-5	trans-1,2-Dichloroethene		5.00	10.0	20.0	U
78-87-5	1,2-Dichloropropane		5.00	10.0	20.0	U
10061-01-5	cis-1,3-Dichloropropene		5.00	10.0	20.0	U
10061-02-6	trans-1,3-Dichloropropene		5.00	10.0	20.0	U
100-41-4	Ethylbenzene		5.00	10.0	20.0	U
591-78-6	2-Hexanone		25.0	50.0	100	U
98-82-8	Isopropylbenzene		5.00	10.0	20.0	U
75-09-2	Methylene chloride		10.0	20.0	40.0	U
79-20-9	Methyl Acetate		10.0	20.0	40.0	X VSICAT
108-87-2	Methylcyclohexane		5.00	10.0	20.0	U
91-20-3	Naphthalene	12.9	5.00	10.0	20.0	D
108-10-1	4-Methyl-2-pentanone		25.0	50.0	100	U
1634-04-4	Methyl t-Butyl Ether		5.00	10.0	20.0	U
100-42-5	Styrene		5.00	10.0	20.0	U
79-34-5	1,1,2,2-Tetrachloroethane		5.00	10.0	20.0	U
127-18-4	Tetrachloroethene		5.00	10.0	20.0	U

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# ANALYSIS DATA SHEET

IR06-GW95-15C

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>1507154-28</u>
Sampled:	<u>07/17/15 10:01</u>	Prepared:	<u>07/29/15 15:32</u>
Solids:		Preparation:	<u>5030B</u>
Batch:	<u>5G29003</u>	Sequence:	<u>5G21106</u>
		Calibration:	<u>5204001</u>
		Instrument:	<u>MS-VOA3</u>
		Dilution:	<u>20</u>

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
108-88-3	Toluene		5.00	10.0	20.0	U
120-82-1	1,2,4-Trichlorobenzene		5.00	10.0	20.0	✓ VS1CH
79-00-5	1,1,2-Trichloroethane		5.00	10.0	20.0	U
71-55-6	1,1,1-Trichloroethane		5.00	10.0	20.0	U
79-01-6	Trichloroethylene		5.00	10.0	20.0	U
75-69-4	Trichlorofluoromethane		10.0	20.0	40.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		10.0	20.0	40.0	U
75-01-4	Vinyl chloride		5.00	10.0	20.0	U
108-38-3/106-42-	m,p-Xylene		10.0	20.0	40.0	U
95-47-6	o-Xylene		5.00	10.0	20.0	U
1330-20-7	Xylenes (total)		15.0	30.0	60.0	U

Total Target Analytes Reported 51 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	29.15	97.2	85 - 114	
Dibromofluoromethane	30.00	29.36	97.9	80 - 119	
1,2-Dichloroethane-d4	30.00	29.28	97.6	81 - 118	
Toluene-d8	30.00	30.58	102	89 - 112	

## ANALYSIS DATA SHEET

IR06-GW97UCH-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-29 File ID: 0715429B.D  
 Sampled: 07/17/15 10:30 Prepared: 07/29/15 12:37 Analyzed: 07/29/15 12:37  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	<u>6.0</u> <del>4.79</del>	2.50	5.00	10.0	<u>✓ U, EBL</u>
71-43-2	Benzene		0.250	0.500	1.00	<u>U</u>
75-27-4	Bromodichloromethane	<u>1.10</u>	0.250	0.500	1.00	
75-25-2	Bromoform		0.250	0.500	1.00	<u>U</u>
74-83-9	Bromomethane		0.500	1.00	2.00	<u>✓ VSICHT</u>
78-93-3	2-Butanone		2.50	5.00	10.0	<u>U</u>
75-15-0	Carbon disulfide	<u>0.372</u>	0.250	0.500	1.00	<u>J</u>
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	<u>U</u>
108-90-7	Chlorobenzene		0.250	0.500	1.00	<u>U</u>
75-00-3	Chloroethane		0.500	1.00	2.00	<u>✓ VSICHT</u>
67-66-3	Chloroform	<u>8.66</u>	0.250	0.500	1.00	
74-87-3	Chloromethane	<u>0.265</u>	0.250	0.500	1.00	<u>J</u>
110-82-7	Cyclohexane		0.250	0.500	1.00	<u>U</u>
124-48-1	Dibromochloromethane	<u>0.425</u>	0.250	0.500	1.00	<u>J</u>
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	<u>U</u>
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	<u>U</u>
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	<u>U</u>
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	<u>U</u>
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	<u>U</u>
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	<u>U</u>
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	<u>U</u>
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	<u>U</u>
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	<u>U</u>
156-59-2	cis-1,2-Dichloroethene	<u>9.42</u>	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	<u>1.46</u>	0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	<u>U</u>
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	<u>U</u>
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	<u>U</u>
100-41-4	Ethylbenzene		0.250	0.500	1.00	<u>U</u>
591-78-6	2-Hexanone		1.25	2.50	5.00	<u>U</u>
98-82-8	Isopropylbenzene		0.250	0.500	1.00	<u>U</u>
75-09-2	Methylene chloride		0.500	1.00	2.00	<u>U</u>
79-20-9	Methyl Acetate		0.500	1.00	2.00	<u>✓ VSICHT</u>
108-87-2	Methylcyclohexane		0.250	0.500	1.00	<u>U</u>
91-20-3	Naphthalene		0.250	0.500	1.00	<u>U</u>
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	<u>U</u>
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	<u>U</u>
100-42-5	Styrene		0.250	0.500	1.00	<u>U</u>
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	<u>U</u>
127-18-4	Tetrachloroethene		0.250	0.500	1.00	<u>U</u>

# ANALYSIS DATA SHEET

IR06-GW97UCH-15C

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>1507154-29</u>
Sampled:	<u>07/17/15 10:30</u>	Prepared:	<u>07/29/15 12:37</u>
Solids:		Preparation:	<u>5030B</u>
Batch:	<u>5G29003</u>	Sequence:	<u>5G21106</u>
		Calibration:	<u>5204001</u>
		Instrument:	<u>MS-VOA3</u>
Dilution:		1	

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
108-88-3	Toluene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	<i>✓ USTCH</i>
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	3.22	0.250	0.500	1.00	
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported 51 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.13	93.8	85 - 114	
Dibromofluoromethane	30.00	29.15	97.2	80 - 119	
1,2-Dichloroethane-d4	30.00	28.83	96.1	81 - 118	
Toluene-d8	30.00	30.30	101	89 - 112	

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# ANALYSIS DATA SHEET

IR06-GW97UCHD-15C

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>1507154-30</u>
Sampled:	<u>07/17/15 10:35</u>	Prepared:	<u>07/29/15 13:02</u>
Solids:		Preparation:	<u>5030B</u>
Batch:	<u>5G29003</u>	Sequence:	<u>5G21106</u>
		Calibration:	<u>5204001</u>
		Instrument:	<u>MS-VOA3</u>

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	<u>6.0 - 4.51</u>	2.50	5.00	10.0	<u>J, U, EBL</u>
71-43-2	Benzene		0.250	0.500	1.00	<u>U</u>
75-27-4	Bromodichloromethane	<u>1.30</u>	0.250	0.500	1.00	
75-25-2	Bromoform		0.250	0.500	1.00	<u>U</u>
74-83-9	Bromomethane		0.500	1.00	2.00	<u>U, VSICHT</u>
78-93-3	2-Butanone		2.50	5.00	10.0	<u>U</u>
75-15-0	Carbon disulfide	<u>0.415</u>	0.250	0.500	1.00	<u>J</u>
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	<u>U</u>
108-90-7	Chlorobenzene		0.250	0.500	1.00	<u>U</u>
75-00-3	Chloroethane		0.500	1.00	2.00	<u>U, VSICHT</u>
67-66-3	Chloroform	<u>8.98</u>	0.250	0.500	1.00	
74-87-3	Chloromethane		0.250	0.500	1.00	<u>U</u>
110-82-7	Cyclohexane		0.250	0.500	1.00	<u>U</u>
124-48-1	Dibromochloromethane	<u>0.443</u>	0.250	0.500	1.00	<u>J</u>
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	<u>U</u>
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	<u>U</u>
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	<u>U</u>
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	<u>U</u>
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	<u>U</u>
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	<u>U</u>
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	<u>U</u>
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	<u>U</u>
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	<u>U</u>
156-59-2	cis-1,2-Dichloroethene	<u>9.80</u>	0.250	0.500	1.00	
156-60-5	trans-1,2-Dichloroethene	<u>1.40</u>	0.250	0.500	1.00	
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	<u>U</u>
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	<u>U</u>
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	<u>U</u>
100-41-4	Ethylbenzene		0.250	0.500	1.00	<u>U</u>
591-78-6	2-Hexanone		1.25	2.50	5.00	<u>U</u>
98-82-8	Isopropylbenzene		0.250	0.500	1.00	<u>U</u>
75-09-2	Methylene chloride		0.500	1.00	2.00	<u>U</u>
79-20-9	Methyl Acetate		0.500	1.00	2.00	<u>U, VSICHT</u>
108-87-2	Methylcyclohexane		0.250	0.500	1.00	<u>U</u>
91-20-3	Naphthalene		0.250	0.500	1.00	<u>U</u>
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	<u>U</u>
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	<u>U</u>
100-42-5	Styrene		0.250	0.500	1.00	<u>U</u>
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	<u>U</u>
127-18-4	Tetrachloroethene		0.250	0.500	1.00	<u>U</u>

# ANALYSIS DATA SHEET

IR06-GW97UCHD-15C

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-30 File ID: 0715430A.D  
 Sampled: 07/17/15 10:35 Prepared: 07/29/15 13:02 Analyzed: 07/29/15 13:02  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
108-88-3	Toluene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	✓ USTICH
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene	3.10	0.250	0.500	1.00	
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported 51 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	27.43	91.4	85 - 114	
Dibromofluoromethane	30.00	30.31	101	80 - 119	
1,2-Dichloroethane-d4	30.00	29.15	97.2	81 - 118	
Toluene-d8	30.00	29.66	98.9	89 - 112	

## ANALYSIS DATA SHEET

IR82-EB-071715

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-31 File ID: 0715431A.D  
 Sampled: 07/17/15 15:30 Prepared: 07/29/15 09:42 Analyzed: 07/29/15 09:42  
 Solids: Preparation: 5030B Dilution: 1

Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone	<b>6.14</b>	2.50	5.00	10.0	J
71-43-2	Benzene		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	<i>✓ USTCH</i>
78-93-3	2-Butanone		2.50	5.00	10.0	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	<i>✓ USTCH</i>
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	U
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
591-78-6	2-Hexanone		1.25	2.50	5.00	U
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
75-09-2	Methylene chloride	<b>3.58</b>	0.500	1.00	2.00	
79-20-9	Methyl Acetate		0.500	1.00	2.00	<i>✓ USTCH</i>
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U

# ANALYSIS DATA SHEET

IR82-EB-071715

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-31 File ID: 0715431A.D  
 Sampled: 07/17/15 15:30 Prepared: 07/29/15 09:42 Analyzed: 07/29/15 09:42  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
108-88-3	Toluene	<b>1.79</b>	0.250	0.500	1.00	
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported 51 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.38	94.6	85 - 114	
Dibromofluoromethane	30.00	29.37	97.9	80 - 119	
1,2-Dichloroethane-d4	30.00	29.34	97.8	81 - 118	
Toluene-d8	30.00	30.54	102	89 - 112	

## ANALYSIS DATA SHEET

IR06-IR82-TB01-071715

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-32 File ID: 0715432A.D  
 Sampled: 07/17/15 15:40 Prepared: 07/29/15 08:52 Analyzed: 07/29/15 08:52  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		2.50	5.00	10.0	U
71-43-2	Benzene		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	✓ VSICHT
78-93-3	2-Butanone		2.50	5.00	10.0	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	✓ VSICHT
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	U
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
591-78-6	2-Hexanone		1.25	2.50	5.00	U
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
75-09-2	Methylene chloride		0.500	1.00	2.00	U
79-20-9	Methyl Acetate		0.500	1.00	2.00	✓ VSICHT
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalen <sup>a</sup>		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U

# ANALYSIS DATA SHEET

IR06-IR82-TB01-071715

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-32 File ID: 0715432A.D  
 Sampled: 07/17/15 15:40 Prepared: 07/29/15 08:52 Analyzed: 07/29/15 08:52  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
108-88-3	Toluene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	✓ VSICHT
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported 51 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.53	95.1	85 - 114	
Dibromofluoromethane	30.00	29.11	97.0	80 - 119	
1,2-Dichloroethane-d4	30.00	28.00	93.3	81 - 118	
Toluene-d8	30.00	29.56	98.5	89 - 112	

## ANALYSIS DATA SHEET

IR06-IR82-TB02-071715

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-33 File ID: 0715433A.D  
 Sampled: 07/17/15 15:40 Prepared: 07/29/15 09:17 Analyzed: 07/29/15 09:17  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
67-64-1	Acetone		2.50	5.00	10.0	U
71-43-2	Benzene		0.250	0.500	1.00	U
75-27-4	Bromodichloromethane		0.250	0.500	1.00	U
75-25-2	Bromoform		0.250	0.500	1.00	U
74-83-9	Bromomethane		0.500	1.00	2.00	✓ VSICHT
78-93-3	2-Butanone		2.50	5.00	10.0	U
75-15-0	Carbon disulfide		0.250	0.500	1.00	U
56-23-5	Carbon tetrachloride		0.250	0.500	1.00	U
108-90-7	Chlorobenzene		0.250	0.500	1.00	U
75-00-3	Chloroethane		0.500	1.00	2.00	✓ VSICHT
67-66-3	Chloroform		0.250	0.500	1.00	U
74-87-3	Chloromethane		0.250	0.500	1.00	U
110-82-7	Cyclohexane		0.250	0.500	1.00	U
124-48-1	Dibromochloromethane		0.250	0.500	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane		0.500	1.00	2.00	U
106-93-4	1,2-Dibromoethane (EDB)		0.250	0.500	1.00	U
95-50-1	1,2-Dichlorobenzene		0.250	0.500	1.00	U
541-73-1	1,3-Dichlorobenzene		0.250	0.500	1.00	U
106-46-7	1,4-Dichlorobenzene		0.250	0.500	1.00	U
75-71-8	Dichlorodifluoromethane		0.500	1.00	2.00	U
75-34-3	1,1-Dichloroethane		0.250	0.500	1.00	U
107-06-2	1,2-Dichloroethane		0.250	0.500	1.00	U
75-35-4	1,1-Dichloroethene		0.250	0.500	1.00	U
156-59-2	cis-1,2-Dichloroethene		0.250	0.500	1.00	U
156-60-5	trans-1,2-Dichloroethene		0.250	0.500	1.00	U
78-87-5	1,2-Dichloropropane		0.250	0.500	1.00	U
10061-01-5	cis-1,3-Dichloropropene		0.250	0.500	1.00	U
10061-02-6	trans-1,3-Dichloropropene		0.250	0.500	1.00	U
100-41-4	Ethylbenzene		0.250	0.500	1.00	U
591-78-6	2-Hexanone		1.25	2.50	5.00	U
98-82-8	Isopropylbenzene		0.250	0.500	1.00	U
75-09-2	Methylene chloride		0.500	1.00	2.00	U
79-20-9	Methyl Acetate		0.500	1.00	2.00	✓ VSICHT
108-87-2	Methylcyclohexane		0.250	0.500	1.00	U
91-20-3	Naphthalene		0.250	0.500	1.00	U
108-10-1	4-Methyl-2-pentanone		1.25	2.50	5.00	U
1634-04-4	Methyl t-Butyl Ether		0.250	0.500	1.00	U
100-42-5	Styrene		0.250	0.500	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane		0.250	0.500	1.00	U
127-18-4	Tetrachloroethene		0.250	0.500	1.00	U

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# ANALYSIS DATA SHEET

IR06-IR82-TB02-071715

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Matrix: Water Laboratory ID: 1507154-33 File ID: 0715433A.D  
 Sampled: 07/17/15 15:40 Prepared: 07/29/15 09:17 Analyzed: 07/29/15 09:17  
 Solids: Preparation: 5030B Dilution: 1  
 Batch: 5G29003 Sequence: 5G21106 Calibration: 5204001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
108-88-3	Toluene		0.250	0.500	1.00	U
120-82-1	1,2,4-Trichlorobenzene		0.250	0.500	1.00	✓ UVSCH
79-00-5	1,1,2-Trichloroethane		0.250	0.500	1.00	U
71-55-6	1,1,1-Trichloroethane		0.250	0.500	1.00	U
79-01-6	Trichloroethylene		0.250	0.500	1.00	U
75-69-4	Trichlorofluoromethane		0.500	1.00	2.00	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		0.500	1.00	2.00	U
75-01-4	Vinyl chloride		0.250	0.500	1.00	U
108-38-3/106-42-	m,p-Xylene		0.500	1.00	2.00	U
95-47-6	o-Xylene		0.250	0.500	1.00	U
1330-20-7	Xylenes (total)		0.750	1.50	3.00	U

Total Target Analytes Reported 51 Project Analytes: 51

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	28.28	94.3	85 - 114	
Dibromofluoromethane	30.00	29.62	98.7	80 - 119	
1,2-Dichloroethane-d4	30.00	28.61	95.4	81 - 118	
Toluene-d8	30.00	30.37	101	89 - 112	

1507154 Summ Package

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**Data Completeness**

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B)

Laboratory: Empirical Laboratories

**Holding Times**

Sampling Date: 7/13-17/15

Received Date: 7/18/15

Analysis Dates: 7/23-29/15

Cooler Temp: 3.4°C

All holding time requirements were met.

**Calibrations**

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to high %RSD, %D and low RRF, see attached form VI and VII.

**Internal Standards**

All criteria were met.

**Blank Summary**

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying criteria.
- Qualification/Action codes where applied as stated in table below:

<b>Blank Type</b>	<b>Blank Result</b>	<b>Sample Result</b>	<b>Action for Samples</b>
Method, Field	Detects	Not detected	No qualifications
	< LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	> LOD*	< LOD*	Report LOD value with a U
		≥ LOD* and < blank concentration	Report the concentration for the sample with a U, or qualify the data as unusable R
		≥ LOD* and ≥ blank concentration	Use professional judgment
	= LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	Gross contamination	Detects	Qualify results as unusable R

\*2x the LOD for methylene chloride, 2-butanone and acetone

No contamination was exhibited in the method blanks. Associated QC blanks: IR06-IR82-TB01-071715 and IR06-IR82-TB02-071715- trip blanks (no positive results in either sample) and IR06-EB-071315 and IR82-EB071715-

SDG# 1507154  
MCB Camp Lejeune, CTO-WE9A

VOA

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Blank Contamination and Qualification Summaries

Blank ID	Compound	Concentration	Reporting Limit (LOD)
IR06-EB071315	acetone	8.69 ug/L	5.0
	methylene chloride	6.71	1.0
	toluene	13.4	0.5
IR82-EB-071715	acetone	3.58	5.0
	methylene chloride	6.14	1.0
	toluene	1.79	0.5

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
IR06-GW97UCH-15C, IR06-GW97UHD-15C	acetone	U at LOD	EBL

**Surrogates**

All criteria were met.

**Laboratory Control Sample**

All criteria were met.

**Matrix Spike/Spike Duplicate Samples**

An MS/MSD was submitted for samples IR06-GW88UCH-15C (all criteria met) and IR06-GW95-15C (chlorobenzene slightly low in MS but in for the MSD, no qualifications required).

**Field Duplicate Sample**

A field duplicate was submitted for samples IR82-GW38UCH-15C (positive results, no qualifications), IR82-GW30-15C (positive results, no qualifications), IR06-GW92LCH-15C (qualifications required) and IR06-GW97UCH-15C (positive results, no qualifications). See attached sheets.

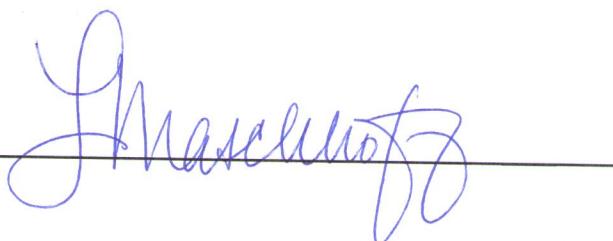
**Specific Comments:**

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

We have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications were required.

Validator Signature:



Date: 8/30/15

SDG# 1507154  
MCB Camp Lejeune, CTO-WE9A  
VOA  
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# ANALYSIS SEQUENCE SUMMARY

**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Sequence:	<u>5G20206</u>	Instrument:	<u>MS-VOA6</u>
Calibration:	<u>5202001</u>		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5G20206-TUN1	0720TU1.D	07/20/15 13:52
Cal Standard	5G20206-CAL1	0720CAL1.D	07/20/15 15:19
Cal Standard	5G20206-CAL2	0720CAL2.D	07/20/15 15:48
Cal Standard	5G20206-CAL3	0720CAL3.D	07/20/15 16:16
Cal Standard	5G20206-CAL4	0720CAL4.D	07/20/15 16:45
Cal Standard	5G20206-CAL5	0720CAL5.D	07/20/15 17:14
Cal Standard	5G20206-CAL6	0720CAL6.D	07/20/15 17:43
Cal Standard	5G20206-CAL7	0720CAL7.D	07/20/15 18:12
Cal Standard	5G20206-CAL8	0720CAL8.D	07/20/15 18:41
Cal Standard	5G20206-CAL9	0720CAL9.D	07/20/15 19:10
Initial Cal Check	5G20206-ICV2	0720ICV2.D	07/20/15 20:37

# INITIAL CALIBRATION DATA (Continued)

**SW8260B**

Laboratory: Empirical Laboratories, LLC

Client: ENCO

Calibration: 5202001

Matrix: Water

SDG: 1507154

Project: Lejeune CTO-WE9A

Instrument: MS-VOA6

Calibration Dates: 7/20/15 15:19      7/20/15 19:10

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acetone	0.110438	12.59313	3.35875	0.1907117			15	
Acetonitrile	4.519286E-02 ✓	10.30204	3.425556	0.3298839			15	
Acrolein	0.0408481	8.737813	3.246667	0.2172324			15	
Acrylonitrile	0.1218057	10.16611	4.155556	0.1741665			15	
Benzene	1.139572	9.907637	7.268889	4.934051E-02			15	
Allyl chloride	0.1305907	11.25561	4.221111	0.2756219			15	
Bromobenzene	0.7867174	9.885715	12.00111	2.881969E-02			15	
Bromo-chloromethane	0.1682953	10.87508	6.35375	7.997304E-02			15	
Bromodichloromethane	0.4681719	10.01514	8.265556	6.058059E-02			15	
Bromoform	0.3965472	19.57799 ✓ NT	11.41444	4.342087E-02		0.9998721	SPCC (0.1)	
Bromomethane	0.2494824	5.564665	2.492222	0.2673312			15	
Bromo-fluorobenzene	0.9212635	1.480584	11.85	2.338915E-02			15	
n-Butylbenzene	2.377023	14.45874	13.43111	3.078842E-02			15	
2-Butanone	0.1993054	9.216332	5.816667	8.644521E-02			15	
sec-Butylbenzene	3.071573	13.81851	12.89889	2.464658E-02			15	
tert-Butylbenzene	2.309318	12.34049	12.66111	1.527654E-02			15	
Carbon disulfide	0.8839807	7.206292	4.31	0.1157122			15	
Carbon tetrachloride	0.4477875	10.78222	7.235555	7.093404E-02			15	
Chlorobenzene	1.500662	10.38573 ✓	10.69556	5.099245E-02			SPCC (0.3)	
Chloroethane	0.2595527	37.52163 ✓ NT	2.617778	0.2547459 ✓ NT	0.9998444	0.99	CCC (30)	
Chloroform	0.6911476	5.78593	6.333333	7.709704E-02			0.99	
2-Chloroethyl vinyl ether	0.1854818	25.30768 ✓	8.638889	3.568509E-02		0.9998037	0.99	
Chloromethane	0.4528308	9.324524	1.966667	0.2544159			SPCC (0.1)	
1-Chlorohexane	0.7630807	9.771892	10.67556	4.964707E-02			15	
2-Chlorotoluene	2.544086	9.618523	12.22889	2.912248E-02			15	
Chloroprene	0.7061854	7.891727	5.615556	0.1289495			15	
4-Chlorotoluene	3.066637	9.315724	12.29	9.302922E-03			15	
cyclohexane	0.5714131	8.904891	7.162222	6.222032E-02			15	
Dibromo-chloromethane	0.699817	14.26763	9.93125	3.217982E-02			15	
1,2-Dibromo-3-chloropropane	0.1262638	20.16829 ✓ NT	14.02222	2.990817E-02	0.9996718	0.99		
1,2-Dibromoethane (EDB)	0.6120824	10.79303	10.14667	5.001869E-02			15	
Dibromomethane	0.2433322	7.925607	8.198889	0.0743961			15	

NT - NOT TARGET SHORT LIST

1507154 Summ Package

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# INITIAL CALIBRATION DATA (Continued)

SW8260B

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Calibration:	<u>5202001</u>	Instrument:	<u>MS-VOA6</u>
Matrix:	<u>Water</u>	Calibration Dates:	<u>7/20/15 15:19</u> <u>7/20/15 19:10</u>

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,2-Dichlorobenzene	1.332191	9.908332	13.38111	2.044694E-02			15	
1,3-Dichlorobenzene	1.424922	9.067858	12.98	1.702262E-02			15	
trans-1,4-Dichloro-2-butene	0.4058388	12.27569	11.82	2.142507E-02			15	
cis-1,4-Dichloro-2-butene	0.4098841	18.51081 ✓	11.51	1.522531E-02		0.9996873	0.99	
1,4-Dichlorobenzene	1.478524	7.477766	13.06667	5.421045E-02			15	
Dichlorodifluoromethane	0.4193368	11.28656	1.771111	0.1886811			15	
1,1-Dichloroethane	0.6530334	7.906133	5.347778	0.1252478			SPCC (0.1)	
1,2-Dichloroethane	0.7249429	7.781372	7.104444	7.467871E-02			15	
1,1-Dichloroethene	0.2241765	4.978461	3.778889	0.2456395			CCC (30)	
cis-1,2-Dichloroethene	0.3234623	10.06764	6.074445	0.1196596			15	
trans-1,2-Dichloroethene	0.2645692	5.533945	4.957778	0.1348832			15	
1,2-Dichloroethene (total)	0.2940158	7.658166	6.074445	0.1196596			15	
1,2-Dichloropropane	0.3458937	9.437475	8.088889	4.565049E-02			CCC (30)	
1,3-Dichloropropane	1.007238	9.397118	9.683333	5.437246E-02			15	
2,2-Dichloropropane	0.4832648	6.859835	6.177778	0.1081693			15	
1,1-Dichloropropene	0.4688167	7.691507	7.118889	4.356297E-02			15	
cis-1,3-Dichloropropene	0.5268612	16.26934 ✓	8.848889	4.184165E-02		0.9998694	0.99	
trans-1,3-Dichloropropene	1.113055	13.96986	9.32	1.592992E-02			15	
1,4-Dioxane	2.577561E-03 ✓	11.53949	8.2575	8.363931E-02			15	
Ethylbenzene	2.623814	14.02151	10.84889	3.412811E-02			CCC (30)	
Ethyl Methacrylate	0.7857529	19.21635 ✓	9.518889	3.530714E-02		0.9998199	0.99	
Hexachlorobutadiene	0.3038135	6.201212	15.38111	2.138948E-02			15	
Hexane	0.3203571	7.771085	5.558889	0.1664583			15	
2-Hexanone	0.5418309	15.37418 ✓	9.627778	4.309789E-02		0.9998868	0.99	
Iodomethane	0.3525032	22.59462 ✓	3.965556	0.1835761		0.9983837	0.99	
Isobutyl alcohol	7.804298E-03	17.96844 ✓	6.445555	8.250655E-02		0.9994035	0.99	
Isopropylbenzene	2.324279	18.19648 ✓	11.74333	4.015706E-02		0.9999506	0.99	
p-Isopropyltoluene	2.650521	10.4347	13.03556	4.100107E-02			15	
Methacrylonitrile	0.3034231	13.30088	5.987778	0.1816346			15	
Methylene chloride	0.305857	6.174654	4.267778	0.256417			15	
Methyl Acetate	0.3157754	10.09739	4.141111	0.1886235			15	
Methylcyclohexane	0.345846	11.72342	8.412222	5.042027E-02			15	

**INITIAL CALIBRATION DATA (Continued)**  
**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Calibration:	<u>5202001</u>	Instrument:	<u>MS-VOA6</u>
Matrix:	<u>Water</u>	Calibration Dates:	<u>7/20/15 15:19</u> <u>7/20/15 19:10</u>

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Naphthalene	1.620892	19.18235 ✓	15.24222	3.251827E-02		0.9998683	0.99	
Methyl Methacrylate	0.3883536	12.48252	8.237777	5.672676E-02			15	
4-Methyl-2-pentanone	0.4085874	14.38511	8.778889	3.650017E-02			15	
Methyl t-Butyl Ether	0.8986615	8.940247	4.965555	0.1055597			15	
n-Propylbenzene	3.933478	13.07862	12.14889	0.0348396			15	
Propionitrile	4.800827E-02 ✓	12.2921	5.538889	0.10755			15	
Styrene	1.509928	22.06969 ✓	11.31778	5.897776E-02		0.9999316	0.99	
1,1,2,2-Tetrachloroethane	0.9152006	9.618298	11.66667	0.0442927			SPCC (0.3)	
1,1,1,2-Tetrachloroethane	0.5624635	11.3662	10.73889	3.098241E-02			15	
tert-Butyl alcohol	0.0256454	5.592262	3.942222	0.1689618			15	
Tetrachloroethene	0.5026296	10.08004	10.04333	4.801013E-02			15	
Toluene	1.308879	9.901455	9.311111	3.850099E-02			CCC (30)	
1,2,3-Trichlorobenzene	0.5875489	9.690436	15.52889	2.179947E-02			15	
1,2,4-Trichlorobenzene	0.7133912	11.75546	15.09556	3.249527E-02			15	
1,1,2-Trichloroethane	0.4643417	8.40815	9.472222	4.988228E-02			15	
1,1,1-Trichloroethane	0.5352582	7.829681	6.896667	0.1025715			15	
Tetrahydrofuran	3.258007E-02 ✓	10.09251	6.54875	9.897491E-02			15	
Trichloroethene	0.3174093	7.393052	8.038889	0.0454053			15	
Trichlorofluoromethane	0.4942835	8.672534	3.063333	0.2312548			15	
1,2,3-Trichloropropane	0.1949758	16.31903 ✓	11.79333	4.606132E-02		0.9999384	0.99	
1,3,5-Trimethylbenzene	2.73373	13.95276	12.32778	0.0377889			15	
1,2,4-Trimethylbenzene	2.837675	14.21123	12.69111	2.305887E-02			15	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.267105	8.609057	3.853333	0.1835016			15	
Vinyl chloride	0.3768761	7.65458	2.098889	0.2855564			CCC (30)	
m,p-Xylene	2.06278	13.18159	10.95889	0.0527194			15	
o-Xylene	2.181585	14.89842	11.34333	3.947999E-02			15	
Vinyl acetate	1.054194	15.36091 ✓	5.437778	0.1227749		0.9991279	0.99	
Xylenes (total)	2.102380	13.09721	11.34333	3.917999E-02			15	
Dibromofluoromethane	0.3816871	3.839894	6.505556	8.199946E-02			15	
1,2-Dichloroethane-d4	6.921772E-02	4.812305	7.011111	4.563493E-02			15	
Toluene-d8	1.97411	1.525349	9.237777	4.655969E-02			15	
1,3,5-Trichlorobenzene	0.8608117	9.301965	14.54444	3.705038E-02			15	

**ANALYSIS SEQUENCE SUMMARY**  
**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Sequence:	<u>5G20505</u>	Instrument:	<u>MS-VOA6</u>
Calibration:	<u>5202001</u>		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5G20505-TUNI	0723TU1.D	07/23/15 07:43
Calibration Check	5G20505-CCV1	0723CCV1.D	07/23/15 08:14
LCS	5G23007-BS1	0723LCS1.D	07/23/15 08:42
Blank	5G23007-BLK1	0723BLK1.D	07/23/15 10:38
IR06-EB-071315	1507154-04 ✓	0715404A.D	07/23/15 11:36
IR06-GW88UCH-15C	1507154-01	0715401B.D	07/23/15 12:05
IR06-GW92LCH-15C	1507154-02	0715402B.D	07/23/15 13:02
IR06-GW92LCHD-15C	1507154-03	0715403B.D	07/23/15 13:31
IR82-GW26-15C	1507154-05	0715405B.D	07/23/15 14:00
IR82-GW32UCH-15C	1507154-06	0715406B.D	07/23/15 14:29
IR82-GW27-15C	1507154-07	0715407B.D	07/23/15 14:58
IR82-GW33UCH-15C	1507154-08	0715408B.D	07/23/15 15:27
IR06-GW81-15C	1507154-13	0715413B.D	07/23/15 15:55
IR82-GW24-15C	1507154-12	0715412B.D	07/23/15 16:53
IR82-GW34UCH-15C	1507154-10	0715410B.D	07/23/15 17:22
IR82-GW28-15C	1507154-09	0715409B.D	07/23/15 17:51
IR06-GW88UCH-15C	5G23007-MS1	0715401M.D	07/23/15 18:20
IR06-GW88UCH-15C	5G23007-MSD1	0715401S.D	07/23/15 18:49
High Cal Check	5G20505-HCV1	0723HCV1.D	07/23/15 19:18

✓ = full target list

**CLOSING CALIBRATION CHECK**  
**SW8260B**

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Instrument ID: MS-VOA6 Calibration: 5202001  
 Lab File ID: 0723HCV1.D Calibration Date: 07/20/15 15:19  
 Sequence: 5G20505 Injection Date: 07/23/15  
 Lab Sample ID: 5G20505-HCV1 Injection Time: 19:18

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	200.0	226.9	0.110438	0.125316		13.5	50
Benzene	A	100.0	124.5	1.139572	1.418447		24.5	50
Bromodichloromethane	A	100.0	128.4	0.4681719	0.6009744	NT	28.4	50
Bromoform	Q	100.0	114.6	0.3965472	0.5431523	0.1	14.6	50
Bromomethane	A	100.0	125.3	0.2494824	0.3125779	NT	25.3	50
2-Butanone	A	200.0	216.7	0.1993054	0.2159886		8.4	50
Carbon disulfide	A	100.0	118.5	0.8839807	1.047379		18.5	50
Carbon tetrachloride	A	100.0	135.2	0.4477875	0.605305	NT	35.2	50
Chlorobenzene	A	100.0	126.6	1.500662	1.899542	0.3	26.6	50
Chloroethane	Q	100.0	124.3	0.2595527	0.2592456	NT	24.3	50
Chloroform	A	100.0	120.0	0.6911476	0.8294492		20.0	50
Chloromethane	A	100.0	122.7	0.4528308	0.5555429	0.1	22.7	50
Cyclohexane	A	100.0	130.4	0.5714131	0.745009	NT	30.4	50
Dibromochloromethane	A	100.0	130.0	0.699817	0.9099366	NT	30.0	50
1,2-Dibromo-3-chloropropane	Q	100.0	106.1	0.1262638	0.1601772		6.1	50
1,2-Dibromoethane (EDB)	A	100.0	125.9	0.6120824	0.770818	NT	25.9	50
1,2-Dichlorobenzene	A	100.0	124.2	1.332191	1.653981	NT	24.2	50
1,3-Dichlorobenzene	A	100.0	123.3	1.424922	1.756441	NT	23.3	50
1,4-Dichlorobenzene	A	100.0	122.9	1.478524	1.817638	NT	22.9	50
Dichlorodifluoromethane	A	100.0	140.8	0.4193368	0.5906092	NT	40.8	50
1,1-Dichloroethane	A	100.0	108.8	0.6530334	0.7108025	0.1	8.8	50
1,2-Dichloroethane	A	100.0	122.1	0.7249429	0.885181	NT	22.1	50
1,1-Dichloroethene	A	100.0	123.2	0.2241765	0.2761532	NT	23.2	50
cis-1,2-Dichloroethene	A	100.0	126.8	0.3234623	0.4100527	NT	26.8	50
trans-1,2-Dichloroethene	A	100.0	118.7	0.2645692	0.3139263		18.7	50
1,2-Dichloropropane	A	100.0	125.3	0.3458937	0.4333707		25.3	50
cis-1,3-Dichloropropene	Q	100.0	115.5	0.5268612	0.6970789		15.5	50
trans-1,3-Dichloropropene	A	100.0	130.5	1.113055	1.452317	NT	30.5	50
Ethylbenzene	A	100.0	134.2	2.623814	3.521916		34.2	50

**CLOSING CALIBRATION CHECK**  
**SW8260B**

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Instrument ID: MS-VOA6 Calibration: 5202001  
 Lab File ID: 0723HCV1.D Calibration Date: 07/20/15 15:19  
 Sequence: 5G20505 Injection Date: 07/23/15  
 Lab Sample ID: 5G20505-HCV1 Injection Time: 19:18

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2-Hexanone	Q	200.0	232.0	0.5418309	0.7170069		16.0	50
Isopropylbenzene	Q	100.0	119.7	2.324279	3.259105		19.7	50
Methylene chloride	A	100.0	112.2	0.305857	0.3432767		12.2	50
Methyl Acetate	A	100.0	102.1	0.3157754	0.3224299		2.1	50
Methylcyclohexane	A	100.0	130.7	0.345846	0.45196	NT	30.7	50
Naphthalene	Q	100.0	107.2	1.620892	2.065273		7.2	50
4-Methyl-2-pentanone	A	200.0	258.0	0.4085874	0.5270704	NT	29.0	50
Methyl t-Butyl Ether	A	100.0	107.4	0.8986615	0.9648313		7.4	50
Styrene	Q	100.0	116.9	1.509928	2.138547		16.9	50
1,1,2,2-Tetrachloroethane	A	100.0	119.0	0.9152006	1.089151	0.3	19.0	50
Tetrachloroethene	A	100.0	125.5	0.5026296	0.6307938		25.5	50
Toluene	A	100.0	127.6	1.308879	1.670588	NT	27.6	50
1,2,4-Trichlorobenzene	A	100.0	122.6	0.7133912	0.8743295	NT	22.6	50
1,1,2-Trichloroethane	A	100.0	123.1	0.4643417	0.5716207	NT	23.1	50
1,1,1-Trichloroethane	A	100.0	128.0	0.5352582	0.6850895	NT	28.0	50
Trichloroethene	A	100.0	125.1	0.3174093	0.3970629		25.1	50
Trichlorofluoromethane	A	100.0	124.2	0.4942835	0.6139592	NT	24.2	50
1,1,2-Trichloro-1,2,2-trifluoroethane	A	100.0	124.4	0.267105	0.3322289	NT	24.4	50
Vinyl chloride	A	100.0	130.7	0.3768761	0.4924532		30.7	50
m,p-Xylene	A	200.0	288.5	2.06278	2.975907	NT	44.3	50
o-Xylene	A	100.0	133.9	2.181585	2.922192	NT	33.9	50
Xylenes (total)	A	300.0	422.5	2.102382	2.958002	NT	40.7	50
Bromofluorobenzene	A	30.00	31.02	0.9212635	0.9524545		3.4	50
Dibromofluoromethane	A	30.00	29.22	0.3816871	0.3718149		-2.6	50
1,2-Dichloroethane-d4	A	30.00	29.68	6.921772E-02	6.848785E-02		-1.1	50
Toluene-d8	A	30.00	29.68	1.97411	1.953159		-1.1	50

**ANALYSIS SEQUENCE SUMMARY**  
**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Sequence:	<u>5G20404</u>	Instrument:	<u>MS-VOA3</u>
Calibration:	<u>5204001</u>		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5G20404-TUN1	0720TUN1.D	07/20/15 07:29
Cal Standard	5G20404-CAL1	0720CAL1.D	07/20/15 09:40
Cal Standard	5G20404-CAL2	0720CAL2.D	07/20/15 10:05
Cal Standard	5G20404-CAL3	0720CAL3.D	07/20/15 10:30
Cal Standard	5G20404-CAL4	0720CAL4.D	07/20/15 10:55
Cal Standard	5G20404-CAL5	0720CAL5.D	07/20/15 11:21
Cal Standard	5G20404-CAL6	0720CAL6.D	07/20/15 11:46
Cal Standard	5G20404-CAL7	0720CAL7.D	07/20/15 12:11
Cal Standard	5G20404-CAL8	0720CAL8.D	07/20/15 12:36
Cal Standard	5G20404-CAL9	0720CAL9.D	07/20/15 13:01
Initial Cal Check	5G20404-ICV2	0720ICV2.D	07/20/15 14:16

**ANALYSIS SEQUENCE SUMMARY**  
**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Sequence:	<u>5G21106</u>	Instrument:	<u>MS-VOA3</u>
Calibration:	<u>5204001</u>		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5G21106-TUN1	0729TUN1.D	07/29/15 05:22
Calibration Check	5G21106-CCV1	0729CC1.D	07/29/15 06:20
LCS	5G29003-BS1	0729LCS1.D	07/29/15 06:48
Blank	5G29003-BLK1	0729BL1.D	07/29/15 08:27
IR06-IR82-TB01-071715	1507154-32 ✓	0715432A.D	07/29/15 08:52
IR06-IR82-TB02-071715	1507154-33 ✓	0715433A.D	07/29/15 09:17
IR82-EB-071715	1507154-31 ✓	0715431A.D	07/29/15 09:42
IR06-GW98LCH-15C	1507154-25	0715425B.D	07/29/15 11:47
IR06-GW94-15C	1507154-27 ✓	0715427B.D	07/29/15 12:12
IR06-GW97UCH-15C	1507154-29 ✓	0715429B.D	07/29/15 12:37
IR06-GW97UCHD-15C	1507154-30 ✓	0715430A.D	07/29/15 13:02
IR06-GW95-15C	1507154-28 ✓	0715428B.D	07/29/15 15:32
IR06-GW95-15C	5G29003-MS1	0715428M.D	07/29/15 15:57
IR06-GW95-15C	5G29003-MSD1	0715428S.D	07/29/15 16:22
High Cal Check	5G21106-HCV1	0729HCV1.D	07/29/15 16:47

✓ = full target list

**INITIAL CALIBRATION DATA (Continued)**  
**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Calibration:	<u>5204001</u>	Instrument:	<u>MS-VOA3</u>
Matrix:	<u>Water</u>	Calibration Dates:	<u>7/20/15 9:40</u> <u>7/20/15 13:01</u>

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acetone	0.1022408	14.04455	2.74925	0.318144			15	
Acetonitrile	5.321543E-02	7.724138	2.811	0.4399465			15	
Acrolein	6.361356E-02	8.549396	2.673	0.112948			15	
Acrylonitrile	0.1495699	8.517069	3.372333	0.1199803			15	
Benzene	1.048708	6.360353	6.525333	5.330512E-02			15	
Allyl chloride	8.180695E-02	32.36168 ✓	3.4385	5.111485E-02		0.9982469	0.99	
Bromobenzene	0.8971618	6.679523	11.43178	1.921207E-02			15	
Bromo(chloromethane)	0.1548785	7.221784	5.571	5.357787E-02			15	
Bromodichloromethane	0.342752	6.869917	7.574778	3.178233E-02			15	
Bromoform	0.5650072	13.7462	10.83367	2.160354E-02			SPCC (0.1)	
Bromomethane	0.1403753	23.0231 ✓ NT	2.098333	9.412798E-02		0.9977293	0.99	
Bromotluorobenzene	0.8806683	5.644097	11.279	1.749782E-02			15	
n-Butylbenzene	2.033942	15.55879 ✓	12.89056	1.086486E-02		0.9997771	0.99	
2-Butanone	0.1661732	12.79754	4.990333	0.1682146			15	
sec-Butylbenzene	3.075839	8.764349	12.34133	2.624602E-02			15	
tert-Butylbenzene	2.502145	9.366289	12.10767	1.047778E-02			15	
Carbon disulfide	0.6758757	7.815187	3.551667	7.435131E-02			15	
Carbon tetrachloride	0.3435396	11.99572	6.485222	4.780109E-02			15	
Chlorobenzene	1.935936	11.3475	10.093	1.712903E-02			SPCC (0.3)	
Chloroethane	0.2391932	24.30809 ✓ NT	2.188778	0.1236716		0.9999704	0.99	
Chloroform	0.5193095	8.659034	5.542667	5.962016E-02			CCC (30)	
2-Chloroethyl vinyl ether	0.2160582	8.122231	7.97	6.733009E-03			15	
Chloromethane	0.4673248	11.17604	1.66925	0.1861956			SPCC (0.1)	
1-Chlorohexane	0.8582074	10.94946	10.07567	2.276072E-02			15	
2-Chlorotoluene	2.052021	4.570012	11.66211	2.191884E-02			15	
Chloroprene	0.5089101	7.203629	4.795333	0.0532284			15	
4-Chlorotoluene	2.04185	7.255842	11.72522	3.630119E-02			15	
Cyclohexane	0.5152468	9.808793	6.498	0.0486233			15	
Dibromochloromethane	0.8316805	11.36173	9.308	0.0151862			15	
1,2-Dibromo-3-chloropropane	0.1947779	5.342939	13.49333	3.253866E-03			15	
1,2-Dibromoethane (EDB)	0.7754349	9.050855	9.527667	2.880027E-02			15	
Dibromomethane	0.1941248	6.678312	7.507667	4.222812E-02			15	

**INITIAL CALIBRATION DATA (Continued)**

**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Calibration:	<u>5204001</u>	Instrument:	<u>MS-VOA3</u>
Matrix:	<u>Water</u>	Calibration Dates:	<u>7/20/15 9:40</u> <u>7/20/15 13:01</u>

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,2-Dichlorobenzene	1.595224	4.081408	12.837	2.232068E-02			15	
1,3-Dichlorobenzene	1.481372	9.601127	12.42367	4.781343E-03			15	
trans-1,4-Dichloro-2-butene	0.3225981	13.1342	11.26167	1.455953E-02			15	
cis-1,4-Dichloro-2-butene	0.3367206	7.971685	10.945	2.391512E-02			15	
1,4-Dichlorobenzene	1.525565	9.595723	12.52	6.137777E-03			15	
Dichlorodifluoromethane	0.2946298	10.58916	1.514333	0.1311008			15	
1,1-Dichloroethane	0.5166752	9.619937	4.520333	0.0705295			SPCC (0.1)	
1,2-Dichloroethane	0.4728744	5.629527	6.358666	2.614485E-02			15	
1,1-Dichloroethene	0.2461629	7.799045	3.096333	6.787897E-02			CCC (30)	
cis-1,2-Dichloroethene	0.3058633	9.208564	5.274333	3.960129E-02			15	
trans-1,2-Dichloroethene	0.2574188	5.298971	4.122333	7.509543E-02			15	
1,2-Dichloroethene (total)	0.2816411	7.208437	5.274333	3.960129E-02			15	
1,2-Dichloropropane	0.3257074	7.363285	7.385333	2.430968E-02			CCC (30)	
1,3-Dichloropropane	1.11573	5.431525	9.059	1.578156E-02			15	
2,2-Dichloropropane	0.2697461	12.48463	5.380667	8.065216E-02			15	
1,1-Dichloropropene	0.3255202	10.07247	6.366	0.0689383			15	
cis-1,3-Dichloropropene	0.3898736	11.72972	8.181666	2.221681E-02			15	
trans-1,3-Dichloropropene	0.9512399	12.00752	8.683333	3.339537E-02			15	
1,4-Dioxane	4.047625E-03 ✓	13.31797	7.558	0.1189737			15	
Ethylbenzene	3.105762	8.745174	10.25033	1.523196E-02			CCC (30)	
Ethyl Methacrylate	0.9532306	13.99875	8.887	3.298853E-02			15	
Hexachlorobutadiene	0.3676131	10.85285	14.84867	1.052013E-02			15	
Hexane	0.3054174	14.31819	4.724333	9.425197E-02			15	
2-Hexanone	0.6524697	9.20041	8.998667	1.682335E-02			15	
Iodomethane	0.1984951	47.71414 ✓	3.259667	0.1545065		0.9992626	0.99	
Isobutyl alcohol	9.062879E-03 NT	14.66671	5.627125	4.257444E-02			-15	
Isopropylbenzene	3.138336	12.11631	11.168	2.338694E-02			15	
p-Isopropyltoluene	2.563941	11.81079	12.484	1.773984E-02			15	
Methacrylonitrile	0.237653	6.835944	5.176222	0.084409			15	
Methylene chloride	0.3012505	12.09398	3.478	0.1221506			15	
Methyl Acetate	0.4023587	27.53943 NT	3.3415	8.419163E-02	0.9970708		0.99	
Methylcyclohexane	0.3867166	10.33446	7.712	0.0356359			15	

**INITIAL CALIBRATION DATA (Continued)**

**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Calibration:	<u>5204001</u>	Instrument:	<u>MS-VOA3</u>
Matrix:	<u>Water</u>	Calibration Dates:	<u>7/20/15 9:40</u> <u>7/20/15 13:01</u>

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Naphthalene	2.087977	25.69404	14.71611	5.640738E-03		0.999769	0.99	
Methyl Methacrylate	0.3138423	8.728654	7.544	3.856084E-02			15	
4-Methyl-2-pentanone	0.3787186	7.108814	8.107333	0.0564234			15	
Methyl t-Butyl Ether	0.780321	6.084437	4.093667	9.889833E-02			15	
n-Propylbenzene	3.177592	8.367138	11.58156	2.125449E-02			15	
Propionitrile	5.785218E-02	11.11205	4.707667	0.1783492			15	
Styrene	1.999809	15.11984	10.73333	2.888656E-02		0.9996405	0.99	
1,1,2,2-Tetrachloroethane	0.9326662	8.424952	11.103	0.0122519			SPCC (0.3)	
1,1,1,2-Tetrachloroethane	0.7652086	8.616042	10.14267	1.962901E-02			15	
tert-Butyl alcohol	3.050365E-02	6.446224	3.163333	0.149579			15	
Tetrachloroethene	0.7640677	8.244016	9.417333	2.685093E-02			15	
Toluene	1.729919	7.672491	8.663	3.249023E-02			CCC (30)	
1,2,3-Trichlorobenzene	0.7879118	17.49641	15.00367	0.0191333		0.9996605	0.99	
1,2,4-Trichlorobenzene	0.8348809	19.50919	14.56411	1.985187E-02		0.999924	0.99	
1,1,2-Trichloroethane	0.5943498	6.228933	8.838	2.987501E-02			15	
1,1,1-Trichloroethane	0.4258259	7.62037	6.131555	4.650151E-02			15	
Tetrahydrofuran	4.208203E-02	7.668235	5.760778	0.1162548			15	
Trichloroethene	0.2595488	8.459899	7.331667	1.909877E-02			15	
Trichlorofluoromethane	0.4401385	6.906668	2.538333	0.1025751			15	
1,2,3-Trichloropropane	0.3157898	6.333485	11.23156	2.073104E-02			15	
1,3,5-Trimethylbenzene	2.573318	4.909796	11.766	2.353243E-03			15	
1,2,4-Trimethylbenzene	2.65528	5.561891	12.137	2.298381E-02			15	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.261864	5.463317	3.136	0.1141091			15	
Vinyl chloride	0.4314682	12.70225	1.767556	0.1848393			CCC (30)	
m,p-Xylene	2.318888	9.341037	10.36567	1.766228E-02			15	
o-Xylene	2.555921	11.53771	10.76133	2.386771E-02			15	
Vinyl acetate	0.5380687	35.76133	4.589111	9.411201E-02		0.9997557	0.99	
Xylenes (total)	2.397899	9.945217	10.76133	2.386771E-02			15	
Dibromofluoromethane	0.2805454	4.434025	5.727667	5.413852E-02			15	
1,2-Dichloroethane-d4	6.314635E-02	5.05115	6.26	6.137777E-03			15	
Toluene-d8	2.549378	2.242438	8.584	0.0138228			15	
1,3,5-Trichlorobenzene	1.033799	11.15722	14.011	1.150648E-02			15	

**ANALYSIS SEQUENCE SUMMARY**  
**SW8260B**

Laboratory:	<u>Empirical Laboratories, LLC</u>	SDG:	<u>1507154</u>
Client:	<u>ENCO</u>	Project:	<u>Lejeune CTO-WE9A</u>
Sequence:	<u>5G20905</u>	Instrument:	<u>MS-VOA3</u>
Calibration:	<u>5204001</u>		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5G20905-TUN1	0727TUN1.D	07/27/15 06:52
Calibration Check	5G20905-CCV1	0727CC1.D	07/27/15 07:50
LCS	5G27014-BS1	0727LCS1.D	07/27/15 08:22
Blank	5G27014-BLK1	0727BL1.D	07/27/15 10:02
IR82-GW25UCH-15C	1507154-11RE1	0715411C.D	07/27/15 12:07
IR06-GW82UCH-15C	1507154-14	0715414B.D	07/27/15 12:32
IR06-GW89UCH-15C	1507154-15	0715415B.D	07/27/15 12:57
IR82-GW37UCH-15C	1507154-16	0715416B.D	07/27/15 13:22
IR82-GW29-15C	1507154-17	0715417B.D	07/27/15 13:47
High Cal Check	5G20905-HCV1	0727HCV1.D	07/27/15 17:57

**CLOSING CALIBRATION CHECK**  
**SW8260B**

Laboratory: Empirical Laboratories, LLC SDG: 1507154  
 Client: ENCO Project: Lejeune CTO-WE9A  
 Instrument ID: MS-VOA3 Calibration: 5204001  
 Lab File ID: 0727HCV1.D Calibration Date: 07/20/15 09:40  
 Sequence: 5G20905 Injection Date: 07/27/15  
 Lab Sample ID: 5G20905-HCV1 Injection Time: 17:57

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Benzene	A	100.0	99.84	1.048708	1.047042		-0.2	50
Chlorobenzene	A	100.0	102.7	1.935936	1.988907	0.3	2.7	50
Chloroform	A	100.0	94.88	0.5193095	0.4927222		-5.1	50
Chloromethane	A	100.0	78.41	0.4673248	0.3664066	0.1	-21.6	50 <i>5/15</i>
1,4-Dichlorobenzene	A	100.0	104.4	1.525565	1.592931		4.4	50
1,2-Dichloroethane	A	100.0	98.76	0.4728744	0.4669895		-1.2	50
1,1-Dichloroethene	A	100.0	97.12	0.2461629	0.2390833		-2.9	50
cis-1,2-Dichloroethene	A	100.0	103.8	0.3058633	0.3173764		3.8	50
trans-1,2-Dichloroethene	A	100.0	98.60	0.2574188	0.2538251		-1.4	50
1,2-Dichloropropane	A	100.0	98.91	0.3257074	0.3221728		-1.1	50
Ethylbenzene	A	100.0	102.2	3.105762	3.175245		2.2	50
1,1,2,2-Tetrachloroethane	A	100.0	89.16	0.9326662	0.8316079	0.3	-10.8	50
Tetrachloroethene	A	100.0	101.3	0.7640677	0.7741531		1.3	50
1,1,2-Trichloroethane	A	100.0	94.87	0.5943498	0.5638833		-5.1	50
Trichloroethene	A	100.0	99.67	0.2595488	0.2586897		-0.3	50
Vinyl chloride	A	100.0	93.02	0.4314682	0.4013318		-7.0	50
Bromofluorobenzene	A	30.00	30.53	0.8806683	0.8962861		1.8	50
Dibromofluoromethane	A	30.00	30.21	0.2805454	0.2825398		0.7	50
1,2-Dichloroethane-d4	A	30.00	28.99	6.314635E-02	6.102391E-02		-3.4	50
Toluene-d8	A	30.00	29.05	2.549378	2.468997		-3.2	50

FIELD DUPLICATE SAMPLE SUMMARY

**Sample ID:** IR82-GW38UCH-15C  
**Duplicate Sample ID:** IR82-GW38UCHD-15C

Water: RPD>20%  
Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
cis-1,2-dichloroethene	1430	1380	4
trans-1,2-dichloroethene	411	380	8
1,1,2,2-tetrachloroethane	735	876	18
tetrachloroethene	539	546	1
1,1,2-trichloroethane	22.5	21.8	3
trichloroethene	2350	2200	7
vinyl chloride	21.6	21.6	0
			#DIV/0!

COMMENTS: Qualify all results with RPD >30% for soils and >20% for waters  
as estimated (J/UJ)

\* one of the results below the LOD  
if both results are below the LOD the results are not compared

FIELD DUPLICATE SAMPLE SUMMARY

**Sample ID:** IR06-GW92LCH-15C  
**Duplicate Sample ID:** IR06-GW92LCHD-15C

Water: RPD>20%  
Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
chloroform*	1.29	0.547	81
			#DIV/0!

**COMMENTS:** Qualify all results with RPD >30% for soils and >20% for waters as estimated (J/UJ)

\* one of the results below the LOD  
if both results are below the LOD the results are not compared

FIELD DUPLICATE SAMPLE SUMMARY

**Sample ID:** IR82-GW30-15C  
**Duplicate Sample ID:** IR82-GW30D-15C

Water: RPD>20%

Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
1,1-dichloroethene	1.14	1.06	7
cis-1,2-dichloroethene	15.7	16.2	3
trans-1,2-dichloroethene	3.11	2.77	12
trichloroethene	6.29	5.78	8
		#DIV/0!	

**COMMENTS:** Qualify all results with RPD >30% for soils and >20% for waters  
 as estimated (J/UJ)

\* one of the results below the LOD  
 if both results are below the LOD the results are not compared

FIELD DUPLICATE SAMPLE SUMMARY

**Sample ID:** IR06-GW97UCH-15C  
**Duplicate Sample ID:** IR06-GW97UCHD-15C

Water: RPD>20%  
Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
bromodichloromethane	1.1	1.3	17
chloroform	8.66	8.98	4
cis-1,2-dichloroethene	9.42	9.8	4
trans-1,2-dichloroethene	1.46	1.4	4
trichloroethene	3.22	3.1	4
		#DIV/0!	

**COMMENTS:** Qualify all results with RPD >30% for soils and >20% for waters  
as estimated (J/UJ)

\* one of the results below the LOD  
if both results are below the LOD the results are not compared

## HOLDING TIME SUMMARY

**SW8260B**

Laboratory: Empirical Laboratories, LLC

SDG: 1507154

Client: ENCO

Project: Lejeune CTO-WE9A

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
IR06-GW88UCH-15C	07/13/15 15:05	07/18/15 09:00	07/23/15 12:05	N/A	14.00	07/23/15 12:05	9.92	14.00	
IR06-GW92LCH-15C	07/13/15 16:30	07/18/15 09:00	07/23/15 13:02	N/A	14.00	07/23/15 13:02	9.90	14.00	
IR06-GW92LCHD-15C	07/13/15 16:35	07/18/15 09:00	07/23/15 13:31	N/A	14.00	07/23/15 13:31	9.91	14.00	
IR06-EB-071315	07/13/15 16:20	07/18/15 09:00	07/23/15 11:36	N/A	14.00	07/23/15 11:36	9.84	14.00	
IR82-GW26-15C	07/14/15 10:25	07/18/15 09:00	07/23/15 14:00	N/A	14.00	07/23/15 14:00	9.19	14.00	
IR82-GW32UCH-15C	07/14/15 10:45	07/18/15 09:00	07/23/15 14:29	N/A	14.00	07/23/15 14:29	9.20	14.00	
IR82-GW27-15C	07/14/15 12:35	07/18/15 09:00	07/23/15 14:58	N/A	14.00	07/23/15 14:58	9.14	14.00	
IR82-GW33UCH-15C	07/14/15 12:45	07/18/15 09:00	07/23/15 15:27	N/A	14.00	07/23/15 15:27	9.15	14.00	
IR82-GW28-15C	07/14/15 14:56	07/18/15 09:00	07/23/15 17:51	N/A	14.00	07/23/15 17:51	9.16	14.00	
IR82-GW34UCH-15C	07/14/15 15:26	07/18/15 09:00	07/23/15 17:22	N/A	14.00	07/23/15 17:22	9.12	14.00	
IR82-GW25UCH-15C	07/14/15 16:36	07/18/15 09:00	07/27/15 12:07	N/A	14.00	07/27/15 12:07	12.85	14.00	
IR82-GW24-15C	07/14/15 16:40	07/18/15 09:00	07/23/15 16:53	N/A	14.00	07/23/15 16:53	9.05	14.00	
IR06-GW81-15C	07/15/15 10:20	07/18/15 09:00	07/23/15 15:55	N/A	14.00	07/23/15 15:55	8.27	14.00	
IR06-GW82UCH-15C	07/15/15 11:40	07/18/15 09:00	07/27/15 12:32	N/A	14.00	07/27/15 12:32	12.08	14.00	
IR06-GW89UCH-15C	07/15/15 12:00	07/18/15 09:00	07/27/15 12:57	N/A	14.00	07/27/15 12:57	12.08	14.00	
IR82-GW37UCH-15C	07/15/15 14:41	07/18/15 09:00	07/27/15 13:22	N/A	14.00	07/27/15 13:22	11.99	14.00	
IR82-GW29-15C	07/15/15 14:50	07/18/15 09:00	07/27/15 13:47	N/A	14.00	07/27/15 13:47	12.00	14.00	
IR82-GW38UCH-15C	07/16/15 11:05	07/18/15 09:00	07/28/15 14:42	N/A	14.00	07/28/15 14:42	12.19	14.00	
IR82-GW38UCHD-15C	07/16/15 11:10	07/18/15 09:00	07/28/15 15:07	N/A	14.00	07/28/15 15:07	12.21	14.00	
IR82-GW30-15C	07/16/15 10:50	07/18/15 09:00	07/28/15 11:22	N/A	14.00	07/28/15 11:22	12.06	14.00	
IR82-GW30D-15C	07/16/15 10:55	07/18/15 09:00	07/28/15 11:17	N/A	14.00	07/28/15 11:47	12.08	14.00	
IR06-GW100UCH-15C	07/16/15 13:10	07/18/15 09:00	07/28/15 12:12	N/A	14.00	07/28/15 12:12	12.00	14.00	
IR82-GW35UCH-15C	07/16/15 13:16	07/18/15 09:00	07/28/15 12:37	N/A	14.00	07/28/15 12:37	12.01	14.00	

P 072

## HOLDING TIME SUMMARY

**SW8260B**

Laboratory: Empirical Laboratories, LLC

SDG: 1507154

Client: ENCO

Project: Lejeune CTO-WE9A

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
IR82-GW41LCH-15C	07/16/15 15:45	07/18/15 09:00	07/28/15 13:02	N/A	14.00	07/28/15 13:02	11.93	14.00	
IR06-GW98LCH-15C	07/16/15 16:30	07/18/15 09:00	07/29/15 11:47	N/A	14.00	07/29/15 11:47	12.85	14.00	
IR82-GW42LCH-15C	07/16/15 16:40	07/18/15 09:00	07/28/15 13:27	N/A	14.00	07/28/15 13:27	11.91	14.00	
IR06-GW94-15C	07/17/15 10:00	07/18/15 09:00	07/29/15 12:12	N/A	14.00	07/29/15 12:12	12.13	14.00	
IR06-GW95-15C	07/17/15 10:01	07/18/15 09:00	07/29/15 15:32	N/A	14.00	07/29/15 15:32	12.27	14.00	
IR06-GW97UCH-15C	07/17/15 10:30	07/18/15 09:00	07/29/15 12:37	N/A	14.00	07/29/15 12:37	12.13	14.00	
IR06-GW97UCHD-15C	07/17/15 10:35	07/18/15 09:00	07/29/15 13:02	N/A	14.00	07/29/15 13:02	12.14	14.00	
IR82-EB-071715	07/17/15 15:30	07/18/15 09:00	07/29/15 09:42	N/A	14.00	07/29/15 09:42	11.80	14.00	
IR06-IR82-TB01-071715	07/17/15 15:40	07/18/15 09:00	07/29/15 08:52	N/A	14.00	07/29/15 08:52	11.76	14.00	
IR06-IR82-TB02-071715	07/17/15 15:40	07/18/15 09:00	07/29/15 09:17	N/A	14.00	07/29/15 09:17	11.78	14.00	

1507154

## SHIP TO: 621 Mainstream Drive, Suite 270 • Nashville, TN 37228 • 877-345-1113 • (fax) 865-417-0548

Send Results to:

Send Invoice to:

Analysis Requirements:

Lab Use Only:

26634

11

Name Bianca KleistName Monica Fullerton

Details:

0

Company CH2MCompany CH2MPage 1 of 3

11

Address 14120 Ballantyne CorporateAddress 14120 Ballantyne Corp. A.Cooler No. 1 of 2

11

City CharlotteCity CharlotteDate Shipped 7/17/15

11

State, Zip North Carolina 28277State, Zip NC 28277Shipped By me

11

Phone 704-543-3224Phone 704-544-5177

Turnaround \_\_\_\_\_

11

Fax Fax 

Turnaround \_\_\_\_\_

11

E-mail bikleist.Klust@ch2m.comE-mail monica.fullerton@ch2m.com

Turnaround \_\_\_\_\_

11

Project No./Name:  
Sites 6 and 82 CTO-WEGASampler's (Signature):  
M. Fullerton

CAR #: \_\_\_\_\_

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Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	Comments	No. of Bottles	Lab Use Only Containers/Pres.
01	7/13/15 1505	1A06-GW388UCH-15C	GW	X	3	
02	7/14/15 1505	1E06-GW388UCH-15C-MS	GW	X	3	
03	7/13/15 1630	1A06-GW388UCH-15C-MS	GW	X	3	
04	7/13/15 1620	1D06-EBO1-071315	GW	X X	3	
05	7/14/15 1025	1R82-GW32UCH-15C	GW	X	3	
06	7/14/15 1045	1R82-GW32UCH-15C	GW	X	3	
07	7/14/15 1235	1R82-GW32UCH-15C	GW	X	3	
08	7/14/15 1245	1R82-GW33UCH-15C	GW	X	3	
09	7/14/15 1456	1R82-GW32UCH-15C	GW	X	3	
10	7/14/15 1526	1R82-GW34UCH-15C	GW	X	3	

Sample Kit Prepd by: (Signature)

Date/Time Received By: (Signature)

REMARKS:

Details:

Relinquished by: (Signature)

Date/Time Received By: (Signature)

Relinquished by: (Signature)

Date/Time Received By: (Signature)

Received for Laboratory by: (Signature)

Date/Time Temperature

Distribution: Original and yellow copies accompany sample shipment to laboratory. Pink retained by samplers.

1507154

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD  
SHIP TO: 621 Mainstream Drive, Suite 270 • Nashville, TN 37228 • 877-345-1113 • (fax) 866-417-0548

26635 15

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Send Results to:		Send Invoice to:		Analysis Requirements:		Lab Use Only:	
Name _____	Company _____	Name _____	Company _____	VOA Headspace	Y	N	NA
Address _____	Address _____	City _____	City _____	Field Filtered	Y	N	NA
City _____	City _____	State, Zip _____	State, Zip _____	Correct Containers	Y	N	NA
State, Zip _____	State, Zip _____	Phone _____	Phone _____	Discrepancies	Y	N	NA
Phone _____	Phone _____	Fax _____	Fax _____	Cust. Seals Intact	Y	N	NA
Fax _____	Fax _____	E-mail _____	E-mail _____	Containers Intact	Y	N	NA
Project No./Name: <i>R. J. Hens</i>		Sampler's (Signature): <i>R. J. Hens</i>		Airbill #:			
Lab Use Only	Date/Time Sampled	Sample Description	Sample Matrix	Comments	No. of Bottles	Lab Use Only Containers/Pres.	
11 7/15/15	1636	1K82-GW25UCH-15C	GW	X	3		
12 7/15/15	1640	1K82-GW24-15C	GW	X	3		
13 7/15/15	1020	1K06-GW81-15C	GW	X	3		
14 7/15/15	1140	1K06-GW82UCH-15C	GW	X	3		
15 7/15/15	1200	1K06-GW84UCH-15C	GW	X	3		
16 7/15/15	1441	1K82-GW37UCH-15C	GW	X	3		
17 7/15/15	1450	1K82-GW29-15C	GW	X	3		
18 7/16/15	1105	1K82-GW38UCH-15C	GW	X	3		
19 7/16/15	1110	1K82-GW38UCHD-15C	GW	X	3		
20 7/16/15	1050	1K82-GW30-15C	GW	X	3		
21 7/16/15	1055	1K82-GW30D-15C	GW	X	3		
22 7/16/15	1310	1K06-GW100UCH-15C	GW	X	3		
Sample Kit Prep'd by: (Signature)		Date/Time	Received By: (Signature)	REMARKS:			
Relinquished by: (Signature) <i>R. J. Hens</i>		Date/Time 7/17/15	Received By: (Signature)	Details: Page <u>2</u> of <u>3</u> Cooler No. <u>1</u> of <u>2</u> Date Shipped <u>7/17/15</u> Shipped By <u>M</u> Turnaround _____			
Received for Laboratory by: (Signature) <i>R. J. Hens</i>		Date/Time 7/18/15	Temperature 21.3.3				

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

1507154

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 877-345-1113 ♦ (fax) 866-417-0548

26636

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**EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD****Send Results to:****Send Invoice to:****Analysis Requirements:****Lab Use Only:**

Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_  
 State, Zip \_\_\_\_\_  
 Phone \_\_\_\_\_  
 Fax \_\_\_\_\_  
 E-mail \_\_\_\_\_

Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_  
 State, Zip \_\_\_\_\_  
 Phone \_\_\_\_\_  
 Fax \_\_\_\_\_  
 E-mail \_\_\_\_\_

**Project No./Name:****Sampler's (Signature):**  
*MH***Select VOC's**  
**TCL VOC's****CAR #:**

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	Comments	No. of Bottles	Lab Use Only Containers/Pres.
23	7/16/15 1316	1K82-GW35UCH-15C	GW	X	3	NA
24	7/16/15 1545	1K82-GW41LCH-15C	GW	X	3	NA
25	7/16/15 1630	1K82-GW98LCH-15C	GW	X	3	NA
26	7/16/15 1640	1K82-GW42LCH-15C	GW	X	3	NA
27	7/17/15 1000	1K82-GW94-15C	GW	X	3	NA
28	7/17/15 1001	1K82-GW95-15C	GW	X	3	NA
29	7/17/15 1030	1K82-GW97UCH-15C	GW	X	3	NA
30	7/17/15 1035	1K82-GW97UCH-15C	GW	X	3	NA
31	7/17/15 1530	1K82-E802-07115	W	X X	3	NA
32	7/17/15 1540	TRP Blank	W	X	6	NA

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA
Airbill #:			

REMARKS:	Details:
Relinquished by: (Signature) <i>MH</i>	Date/Time Received By: (Signature) 7/17/15
Relinquished by: (Signature)	Date/Time Received By: (Signature)
Received for Laboratory by: (Signature) <i>D. Johnson</i>	Date/Time Temperature 0900.0730 3.3, 2.1
Sample Kit Prepd by: (Signature)	Date/Time Received By: (Signature)

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

V:\Standard Operating Procedures\Current SOP File Directory\Forms\OS10\_R21\_20140729\_Chain of Custody\Doc 507154-Summary

**II. EMPIRICAL LABORATORIES  
COOLER RECEIPT FORM**

Cooler Received/Opened On: 07/18/15 @ 0930

Work order# 1507154

1. Tracking # 3150 (last 4 digits, FedEx)

Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 3.3 °C + correction factor (-0.0) = 3.3 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES...NO...NA

4. Were custody seals on outside of cooler?

If yes, how many and where: 1 on front

YES... NO...NA

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler?

YES... NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial/date) JTr 7/18/15

7. Were custody seals on containers: YES  NO  and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubble wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments \_\_\_\_\_  
If multiple coolers, sequence # \_\_\_\_\_

I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTr 7/18/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTr 7/18/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR# \_\_\_\_\_

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTr 7/18/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTr 7/18/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) JTr 7/18/15

## II. EMPIRICAL LABORATORIES COOLER RECEIPT FORM

Cooler Received/Opened On: 07/18/15 @ 0900

Work order# 1507154

1. Tracking # 4407 (last 4 digits, FedEx)

Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 2.1 °C + correction factor( -0.0) = 2.1 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen?

YES  NO  NA

4. Were custody seals on outside of cooler?

YES  NO  ...NA

If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly?

YES  NO  ...NA

6. Were custody papers inside cooler?

YES  NO  ...NA

I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 7/18/15

7. Were custody seals on containers:

YES  NO  and Intact

YES  NO  ...NA

Were these signed and dated correctly?

YES  NO  ...NA

8. Packing material used? Bubble wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process:

Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)?

YES  NO  ...NA

11. Were all container labels complete (#, date, signed, pres., etc)?

YES  NO  ...NA

12. Did all container labels and tags agree with custody papers?

YES  NO  ...NA

13. a. Were VOA vials received?

YES  NO  ...NA

b. Was there observable headspace present in any VOA vial (>5mm-6mm)?

YES  NO  ...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES  NO  ...NA...Comments \_\_\_\_\_

If multiple coolers, sequence # 2

I certify that I unloaded the cooler and answered questions 7-14 (initial/date) JTG 7/18/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level?

YES  NO  ...NA

b. Did the bottle labels indicate that the correct preservatives were used?

YES  NO  ...NA

16. Was residual chlorine present?

YES  NO  ...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) JTG 7/18/15

17. Were custody papers properly filled out (ink, signed, etc)?

YES  NO  ...NA

18. Did you sign the custody papers in the appropriate place?

YES  NO  ...NA

19. Were correct containers used for the analysis requested? YES  NO  ...NA If not, PM notified?

YES  NO  ...NA

20. Was sufficient amount of sample sent in each container? YES  NO  ...NA If not, PM notified?

YES  NO  ...NA

21. Were there Non-Conformance issues at login? YES  NO  ...NCR# \_\_\_\_\_

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) JTG 7/18/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) JTG 7/18/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) JTG 7/18/15

**II. EMPIRICAL LABORATORIES  
COOLER RECEIPT FORM (Continued)**

**LIMS Data Entry Second Check**

Work order# 1507154

- ★ 22. Cooler Receipt Form Issues reviewed and communicated to PM?  YES...NO...NA
23. Client and Project verified to match the COC/CRF in LIMS Project Screen?  YES...NO...NA
24. Following items verified to items verified to match the COC/CRF in LIMS Receipt Screen:
- a. Received Date/Received By  YES...NO...NA
  - b. TAT (COC specified different?)  YES...NO...NA
  - c. Shipping Container Temperatures (corrected temps)  YES...NO...NA
  - d. Condition Items (seals, intact, labels, preservation, ROI)  YES...NO...NA
25. Following LIMS Sample Information verified against COC for each sample:
- a. Name  YES...NO...NA
  - b. QC Source  YES...NO...NA
  - c. Matrix  YES...NO...NA
  - d. Sample Type  YES...NO...NA
  - e. Sampled Date/Time (Correct Time Zone)  YES...NO...NA
  - f. Work Analyses/Versions (if applicable)  YES...NO...NA
  - g. Sample issues included in comments (limited volume, concentration warnings, etc.)? YES...NO...NA
  - h. Unpreserved VOA holding time set to 7 days?  YES...NO...NA
26. Containers consistent with tests requested?  YES...NO...NA
27. Field data entered and matching COC?  YES...NO...NA

I certify that I have verified the LIMS data entry and answered questions 23-27 above (initial/date): TA 7/10/15

**Additional Details:**

★ Received add'l sample volume not listed on COC for sample '1R82-GW4ZLCH-ISC', logged for MS/MSD.

★ Pea-size + larger headspace present for the following:

'1R06-GW97UCH-ISC' (3 HCl vials)

'1R06-GW97UCHD - ISC' (1 HCl vial)

2 sets of trip blanks rec'd. Only listed on COC DRGS  
Logged 2nd set in as 2 separate samples. 7/12/15

**III. EMPIRICAL LABORATORIES, LLC**  
**DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT**

Workorder#: 1507154

	Verification Item	Yes	No	NA
1.	<b>Cooler Receipt Form Issues reviewed and communicated to client</b>	X		
2.	<b>Element/ Project Screen/items verified to match the COC/CRF:</b>			
a.	Client/Project	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	<b>Receipt Screen items verified to match the COC/CRF:</b>			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	<b>Sample Information verified against COC for each sample:</b>			
a.	Name	X		
b.	QC Source	X		
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	<b>Containers consistent with tests requested</b>	X		
6.	<b>Field data entered and matching COC, if applicable</b>			X
	<b>I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):</b>	SMG 07/20/2015		

---

**From:** Bianca.Kleist@CH2M.com  
**Sent:** Tuesday, July 21, 2015 2:48 PM  
**To:** sgordon@empirlabs.com  
**Subject:** FW: Lejeune WE9A sample receipt

Hi Sonya,

Please see updates needed and TB IDs below. Could you have them revise the login? Thanks!

- Please update IR06-EB01-071315 to IR06-EB-071315
- Please update IR82-EB02-071515 to IR82-EB-071515
- For the Trip Blank listed on the login (07/17/15, 15:40) please correct the ID to read IR06-IR82-TB01-071715
- For the second TB included in the shipment please add this TB to the login, please use ID IR06-IR82-TB02-071715

THANKS!

Bianca

**From:** Kleist, Bianca/CLT  
**Sent:** Tuesday, July 21, 2015 1:12 PM  
**To:** 'sgordon@empirlabs.com'  
**Subject:** RE: Lejeune WE9A sample receipt

Thanks Sonya. I'm going over the login now and will send you info on any corrections needed and I'll also send along the TB IDs shortly. Thanks for checking on the TBs!

**From:** Sonya Gordon [mailto:[sgordon@empirlabs.com](mailto:sgordon@empirlabs.com)]  
**Sent:** Tuesday, July 21, 2015 11:56 AM  
**To:** Kleist, Bianca/CLT  
**Subject:** RE: Lejeune WE9A sample receipt

Hi Bianca,

I talked to our guy. He did confirm that there was a trip blank in each cooler. However, he couldn't remember what samples were in which cooler. Sorry.

**Sonya Gordon**  
**Project Manager**  
**Empirical Laboratories, LLC**  
Main: 615.345.1115 ext. 238 | Toll free: 877.345.1113 | Fax: 866.417.0548

Your opinion is valuable to us. Please click [here](#) to provide us your feedback.

## Sample Delivery Group Case Narrative

### Receipt Information:

The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

The following issues were discovered with the COC and/or samples upon log-in:

1. Received additional sample volume (9 HCl vials total) not listed on the COC for sample IR82-GW42LCH-15C. Sample was logged for MS/MSD.
2. Pea-size and larger headspace present in one vial of the following samples: IR06-GW97UCH-15C and IR06-GW97UCHD-15C.
3. Two sets of trip blanks were received with the shipment and only one set was listed on the COC. The client was notified and indicated the trip blanks with the sample date and time of 7/17/15 at 1540 should have the client ID of IR06-IR82-TB01-071715 and the other trip blank should have the client ID of IR06-IR82-TB02-071715.
4. As per the client, the sample listed on the COC as IR06-EB01-071315 should have the client ID of IR06-EB-071315 and the sample listed on the COC as IR82-EB02-071715 should have the client ID of IR82-EB-071715.

### Changes to the Revision:

This is an original submittal of the final report package.

### Analytical Information:

All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

#### SW8260B:

Note – Sample 1507154-11 was analyzed at a 2x due to possible high concentrations of target analytes; however, the sample was over diluted and re-analyzed as 1507154-11RE1 at a 1x. Only the re-analysis is included in the report. Samples 1507154-02 and -03 were analyzed at a 2x due to the samples foaming during screening and samples 1507154-09 (200x), -10 (50x), -12 (10x), -18 (20x), -19 (20x), and -28 (20x) were analyzed at the dilutions indicated due to high concentrations

082

of target analytes detected during screening. No lower analyses were performed.

The following matrix spikes exceeded criteria:

**5G29003-MS1 (1507154-28)** with a negative bias for Chlorobenzene; note – the associated matrix spike duplicate and batch spike are within criteria

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

,B 083

**Data Qualifiers:**

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

**Analytical Report Terms and Qualifiers**

**DL:** The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

**LOD:** The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 5.0 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

**LOQ:** The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 5.0 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

**\***: Exceeding quality control criteria are associated with the reported result.

**B:** The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

**D:** When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

**E:** The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

**H1:** The result was analyzed outside of the EPA recommended holding time.

**H2:** The result was extracted outside of the EPA recommended holding time.

**H3:** The sample for this analyte was received outside of the EPA recommended holding time.

**J:** The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

- M:** Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.
- N:** The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.
- P:** The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.
- Q:** The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.
- S:** The associated internal standard exceeded criteria.
- U:** The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.
- X:** The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.
- Y:** The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.
- Z:** The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

#### **Chromatographic Flags for Manual Integration:**

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

- A:** The peak was manually integrated as it was not integrated in the original chromatogram.
- B:** The peak was manually integrated due to resolution or co-elution issues in the original chromatogram.
- C:** The peak was manually integrated to correct the baseline from the original chromatogram.
- D:** The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.
- E:** The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

#### **LIMS Definitions / Naming Conventions:**

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

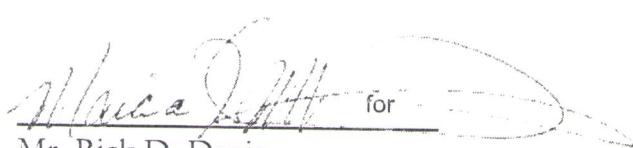
**BLK:** LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

- BS:** LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.
- MS:** The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.
- IDs:** The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "RE" implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

**Statement of Data Authenticity:**

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.



Mr. Rick D. Davis  
Laboratory Technical Director / VP Operations

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